

#### Illustrated Journal of Mining, Popular Science General News. pue

VOLUME LV.

SAN FRANCISCO, SATURDAY, JULY 2, 1887.

Knight's Reversible Water-Wheels.

FOUNDIY NOTES, and 20 Fremont street, are agents for these apcan be effected, where a company has a dam or reservoir, by using this gate. Rix & Firth, 18 Although it was at first thought that San Tartz-more is taking the place of steam in Me also illustrate herewith Knight's patent one of pater-power is taking the place of steam in Me also illustrate herewith Knight's patent machinery. No hoisting works can by reperture of a steam in the State of the Sta

lot of machinery for the Golden Gate mill, at Lost Basin, Arizona. The machinery consists of a 10-stamp battery and all attachments. The Fulton Iron Works have just shipped a

si bas , Zailerred to esneque edt diw vewa wells to Europe, revolutionized the trade, doing with tanks for carrying the oil from the Baku where it is possible to get a suitable water a stead by an ordinary hand lever. The gate is steamers built in England during the last year, supply. We give on this page a out of one of opened and closed by means of water pressure steamers built in England during the last year, oan be handled by the discharge-pumps. The ship will be loaded by means of a pipe line hold. She will steam nine knots an hour and will carry tanks with the capacity of 35,000 gallons. Twenty thousand gallons per minute teet long, 30 feet beam and 134 feet depth of Fulton Iron Works. She is to be wood, 160 A contract for a new steamer has been given by the Sespe Oil Company of Hueneme to the

ing the Government cruiser Charleston. These miles the Government cruiser Charleston. The mills have considerable work on hand for local cape and the making the set.

amount of tod and har iron, nuts, holts, etc.
At the Pacific Iron Works they are building a plant of the Base selecting system of works. full-handed. The furnaces are kept busy on steel for use at the Union Iron Works in build-At the Pacific Rolling-mills they are running vastly more expeditious.

Several other mills will soon be fitted with appliances for working ores by this system. effects for him a saving of some \$6000 a month. per day. Mr. Douglas states that the process Mev., where they are working 100 tons of ore same system which has been in use for the past three months at the Douglas mill, Dayton, ores for the Christy mill, Utah. This is the a plant of the Eas electric system of working

#### Mining Accidents.

At the Yellow Jacket mine, on the Comstock, on Monday last, Joseph Kinniken was fatally injured by being caught between a wall plate

killing him instantly and mangling his head and nedy mine, Amador county, accidentally stepped into the shaft and fell a distance of about 400 feet into the "at map" at the bottom, and the deek of a descending cage. An Austrian miner named Mistevich, who was working in the 600-foot level of the Ken-

tilted over against him, pinning him fast, His right shoulder was orushed and all the vital organs materially injured. foot of the wall of the mine, 9 feet long, 6 feet.

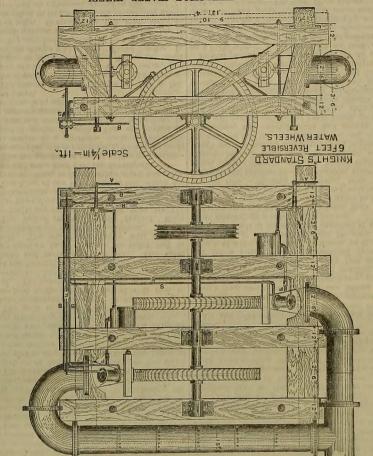
It is a second of the mine, 10 feet. It wide and to see a second of an average thickness of 2 feet. sew another but state and very danger-nearly injured internally. The accident was sew the state of the state of the state from the search of the state of the state of the state from the Hite's cove, Mariposa county, John Kummer body in a frightful manner. In one of the thire mine, at

ni rebwoq to egrade a gaiqmat ni rad novi na to and three wounded. It was caused by the use Clifton, Arizona, by which one man was An accident occurred at the Metonit mine

possible, in order to utilize water-power instead one at a glance can see of what vital impor-

KNIGHT'S PATENT HYDRAULIO GATE.

supply. We give on this page a cut of one of a populed and closed by means of water pressure the Knight six-foot reversible water-wheels applied to the hydraulic cylinder, which is at used for this purpose, in connection with a No.



KNIGHT'S REVERSIBLE WATER WHEEL.

THE coroner's jury investigating the Nanaimo 200 horse-power under the above heads. This two men to work hard to open, in from three 4 gate and nozzle, under heads of from 125 to can open or close with ease a 22-inch gate un-250 feet, The wheel will develop from 100 to der a presente of 500 feet, that would require

is planned especially to take the place of engines working at mines where owners wish to
special exhaust ports, the piston is made to
make the change in the least expensive way close or open the gate at once or slowly. Any miner who was killed.

Independence Day.

BY DEWEY & CO.

blessed with material advantages than our own. It is útting, therefore, that the bittings and america be celebrated by all her sons and and that no country in the world is more the State. We are all realizing every day of our lives the blessings of civil and religious liberty, pendence Day will be well celebrated all over morning. Other cities and towns also show much patriotic enthusiasm this year, and Inde large procession, a regatta, and the ueual Fourth-of-July amusements, Many places of business close from Friday night till Tucsday and agreed to parade, So we are to have a sult, numerous organizations came to the front that they would do without them, and, as a reously to work to get up a procession to prove bration even better than naud. The absence of the militie caused the committee to go vigorburg, it turns out that we are to have a cele-July in a fit and becoming manner, owing to the absence of the militia at their camp in Healds.

following prophetic words concerning the tion of independence he wrote to his wife the After John Adams had signed the Declara-

Fourth of July:

It will, be the most memorable day in the bistory of America. I am apt to believe that bistory of America. I am apt to believe that are the generations as the great anniversary festival. It ought to be commemorated as the day of deliverance by solemn acts of devotion to dod Almighty. It ought to be celebrated with pomp and parade, with shows, games, sports, guns, bells, bonfices, and illuminations from one end of this continent to the other, irom one end of this continent to the other, irom this time former.

#### West Point District.

ing the ores of the district. The sulphurete are mostly shipped to the Selby Lead Works to be A many that more gold should be saved. Sentleman from Meyada is at the camp and talks of putting up chlorination works for workis measurably successful, although it is thought oipal mine of that district. The process of Dr. Russell is used for working this ore, and it sulphuretted ore from the Lookwood, the prin county, brought us a specimen of the highly Mr. C. E. Watkins, of this city, who has just returned from West Point, Calaveras

with developments. works have been ordered in order to proceed the mills. The Sterling mine has recently been bonded, and it is stated that new hoisting. There are several arastras in the camp besides there is a large proportion of it sulphuretted. mill. They are down about 140 feet. The rock is rich. Some of it shows free gold, but The three principal mines are the Lockwood, Blazing Star and Soaproot. The Blazing Star has steen hoisting-works, pumps, etc., but no

pay \$25 to \$50 per ton. The mill was recently Gold Bluff mine, at Downieville, Sierra county, recently. Mr. A. Van Slyke is the superintendent and principal owner. The main tunnent rad principal owner of the rook will main rad one of the rook will was 252 to \$50 per ton. The mill was recently not reason. A REPRESENTATIVE of the PRESS visited the

necessary precautions were not observed, the firing of a badly planted shot, and that the horror found that the explosion was caused by

#### The A B C Astronomy.

is soience of astronomy.

Many years ago. I was aboard a steamer on Mississippi river, admiring the rising moon, and observed to a gentleman (ellow-passenger: TVA).

beerve an earth rise, a body appearing to them " What a magnificent sight it must be to the or, if she has any, to

"What a magnificent sight it must be to the inhabitents of that little orb, if she have of the inhabitents of that little orb, if she have of the orbeing a good of the strategy of the strate hills about Acton for the past 40 years. The district was discovered, I believe, by the district was discovered, I believe, by the district was discovered, I believe, by the mines in a desurbory sort of way, finally abandoning them when it became too difficult or to the better grade of tree-fashion of gonging out the better grade of tree-milling ore on the surfy stand on their heads an incline until they nearly stand on their heads and finally quit. This has been the case at Acton. The veins have been gophered, but, nutil taken hold of by Americans, were never developed.

Mining operations have been carried on in the postoffice for the camp is at Eavens, four miles road, about 50 miles north of Los Angeles. The Editors Press:—Acton is the name of a way-station on the line of the Southern Pacific rail-The Acton Mines.

developed.

Gaveloped.

Gaveloped.

Gaveral of knees old mines are now being operated by the seal of t

**CORRESPONDENCE**,

We admit, unindersed, opinions of cerrespondents.—Ens.

Relies of '49.

rounds of the press: Editors Press:—The following item, taken from the Nevada City Herald, is going the

trom the Nevada City Herada, is going the from the Yereas.

'Scattered here and there among the pines and thickets, along the streams that were mined away back in the fifties, are many lonely graves. The lapse of years has destroyed the stage which once stood at head and foot, covered them with leaves, and in some cases trees are growing upon the little mounds, and in some cases trees are growing upon the little mounds, and in a feet to died and was burded without the rites of burial.

Many of these graves are lost to even those who once knew where they were, and in a few who once knew where they were, and in a few who once knew where the bear and all other streams that were once the remains of the said to the streams that were once the remains of the construction of the said of the said to the said who the said who the said to the said to the said to the said to the said who the said to the said the s

Yes, and who of to-day cares? Soriblers of the store from the store that the store that the store that the store that the store of the

### The Monterey Gold Mines.

Press count in the fixaminer of the quartz fiscovery, and to get better information I discovery, and to get better information I discovery, and to get better information on the subject, for wicke to George Dalton, postmaster at the July Saranbo in 1852. In fact the first foun Mission, and had discovered gold myself at the Prop Saranbo on 18 and discovered gold myself specification of San Antonio. On hearing from the Mission, and the July Saranbo in 1852. In fact the first gold found in California was in Monterey, near the Mission, and the first of Mission of San Antonio. On hearing from the Mission of San Antonio. On hearing from the Mission of San Antonio. On hearing from the Mission of San Antonio on the first of Mission of the July of Mission of San Mission of the July of Mission of the Mission of the Mission of the one while I was there. Mot far of the Mission of the Ornikabank vein. The San Mission of the Ornikabank vein. The San Mission of the Ornikabank vein. The Press was 16 for one of the Mission of the Ornikabank vein. The Press was 16 for one of the Ornikabank vein. The Press was 16 for one of the Ornikabank vein. The Press was 16 for one of the Ornikabank vein. The Press was 16 for one on the san interest in both. The veins of Salinas City and widening to read to root of the Ornikabank vein. The bouse of the Mission of the Ornikabank vein. The veins en go to within 10 or 12 miles by the trail of or or one of the Ornikabank vein. The veins en to to one of the Ornikabank vein. The veins of the pouse of the orning vein in or lode, and the ness the or one of the Ornikabank vein. The veins of the orners it does not be easily on account of the orners it does on the old San Miguelito Remonsal, but it for the orner is used to be, and their wagons or the order of the mines or take the railicape of the orners it does on the old San Miguelito Rando or washing to the old San Miguelito Ra ley, Monterey county, I saw an account in the Press copied from the Examiner of the quartz of your subscribers, John Martin, of Carmel val-FUTORS PRESS :-- While at the house of one

end of the needle with the arrow-point will direct you to the north. Lift your eyes in that direction to the heavens, and nearly midway direction to the heavens, and nearly midway your head you will notice a star not a very bright one; this is the pole star, "Polaris," in the constellation of Urse Minor, or the Little Dear. A little to your left there is a group of stars, named Urse Minor, the Great Bear, the Great Dipper, or Charles' Wain. Seven of the stars of this group form the most remarkable constellation in the northern heavens.

from beyond the Jolon to the sear it is a goldfrom beyond the Jolon to the sear it is a goldbearing country, and now that mineral is found
in the rock, people will have more confidence in
working. The common cry was that gold found
working. The common cry was that gold found
was only a weath; it did not come from close by.
In addition to gold, other minerals will be
found in the coast counties of California to add
to their prosperity and to that of the State.

As I have prospected considerable in this
county, I speak by the card, but California is
not a good country for prospectors. Australia
not a good country for prospectors. Australia
rewards them, California starves them.

It is a very humilisting fact that many persons of somewhat enlarged culture are utterly ignorant of the simplest elementary truths of

[Written for the Parsa by Astron.]

perhaps out out these simple offerings and place from the solinose suppose to the first and the solinose suppose of the first and the solinose suppose to have arisen from from in a sorap book for future reference, and the solinose approach to mysticiam—withese astronomy from the observation of the reading of your of a teachtie of boling water, geology to my solinose the reading of your at long time was considered only a branch of mineralogy a minerale, etc. In fact, geology to my solinose the solinose, and the fact, geology to a long time was considered only a branch of mineralogy a minerale, etc. In fact, geology to the solinose, and the place in the great circle of the solinose, and the higher as a bold, Werner and Lyell changed its allow boldt, Werner and Lyell changed its allow boldt with the solences and solence in matica—enables and selection only, with its its work of the solence selection and weight our ann and his attendant orbs; to gauge the new systems of the great conces—the telescope, spectro weigh our ann and his attendant orbs; to gauge the mysteries of the great become in the with the mysteries of the great become in the wing to the great conces—the solence should assers in measured by and his the matical such and his short on the solence is worth studying. In this your or so and observe, We shall soon not necessary to get to an hour or so and observe, wait patiently for an hour or so and observe, we should to any and every part of our plane; and socole of the great concesses bove us; wait patiently to a hour or so and observe, we should to any and every part of our plane; and socole of the signal soon not observed to the wing of light to any and every part of our plane; and socole of the signal solinose brilliant gens. We shall soon not only the signal of the signal solinose of the signal solinose of the signal solinose of the si

The Inyo Acquister says: Keeler is becoming a large shipping point for ore. There is an average of 80 tons a week shipped, Thomas Holand sending out 75 tons of the whole amount. The ore production of Southern Inyo is increasing dealy, and the outlook promises a still larger output in the near inture.

Mining Burean Museum nave occupantion of the first the secretary is engaged in recrowded that the various geological and miner along the second of the first special additions which are arriving every day. Тив Миниче Викели.—Тhe cases at the

stars are distant from each other, win unuay you to the pole star. Jience these two stars are called the "Pointers."
Astronomers have agreed to use Greek letters to designate the different stars in each constellation. Thus, in the above disgram, Dubhe is lation. Thus, in the above disgram, Dubhe is (alpha) and of Urea Major. Benetinsachi sy (eta) of Urea Major. Benetinsachi sy (eta) of ient to have the whole Greek alphabet to refer to, although we shall rarely have occasion to use more than the first six or eight letters.

Mizar is a double star; its companion is named Alcor. This double can be seen with a glass of very low power; some persons can see it with the naked eye. It should be noticed that a line drawn from Merak through Dubhe, and carried about five times as far as those two stars are distant from each other, will bring you to the pole star. Hence those two stars are

cating the other constellations in these regions of loading the other constellations in these regions of space.

At 9 o'clock in the evening, in the month of July, the constellations of the Dipper (Ures Major) and Cassiopeis, with the pole star nearly as in the diagram. And at all hours of the ain the diagram. And at all hours of the ain the diagram. And at all hours of the spar, these ears as in the diagram. And at all hours of the year, these ears night, and all seasons of the year, these ears appear around the pole star—as the summer of the pear to move around the pole star—as the sum supposes to move around the pole star—as the sum pole, etc. (If you copy the diagram on a small pole, etc. (If you copy the diagram on a small by piece of stiff spaper, and stiff in which the head star, you can trun the paper, and stiff in which the heads of a clock move, and et all the various positions.) These, and some others that lie around the pole of the circumpolar constellations the parties of a clock move, and et all the various positions. As the ers and some others that lie around the pole of the observing the pole of the contempolar onstellations the parties the incommendations. As the tring latitude, or in most parte of the oriental consellations the parties of the serior of objects or objects or in most partes of the circumpolar onstellations the partes of the observing the paper. Ures Major. The seven most noticeable stars in this group—those which form the Dipper—have names, and very peculiar form the Dipper—have names, and very peculiar form the Dipper—have names, and very peculiar ones, which can be learned from diagram Mo. S.

Now, if you look at the Dipper in its entirety, and then cast your eye across the northern heaves, taking in line the pole star, you will notice another constellation or group of stares as about the same distance from the pole star as Drea Major, in form somewhat like a capital This constellation is named Casanopeis. I This constellation is named the pole star. This constellation is named the with these constellations; you will find it a great the pole of the Worth. The poly the misphere, affording you the Morth ern Hemisphere, affording you the means of losting the other constellations in these regions cating the other constellations in the means of losting space.

\* Duppe (a).

(8) Alioth (8). Megrez (8).

.(5) reziM \*

\* Benetnasch (n).

c, tota, Greek Alphabet.

o, Olgus, X, Chi (''ki"), Y, Chi (''ki"), Psi, Chi (''ki"), Chi (''ki"), Chi (''ki"), Chi ('ki"), Chi

p, Rho, 'emaio

V. Camna, O. Delta, E. Epsilon, S. Zeta, W. Eta, S. Theta, S. Theta,

Gamma,

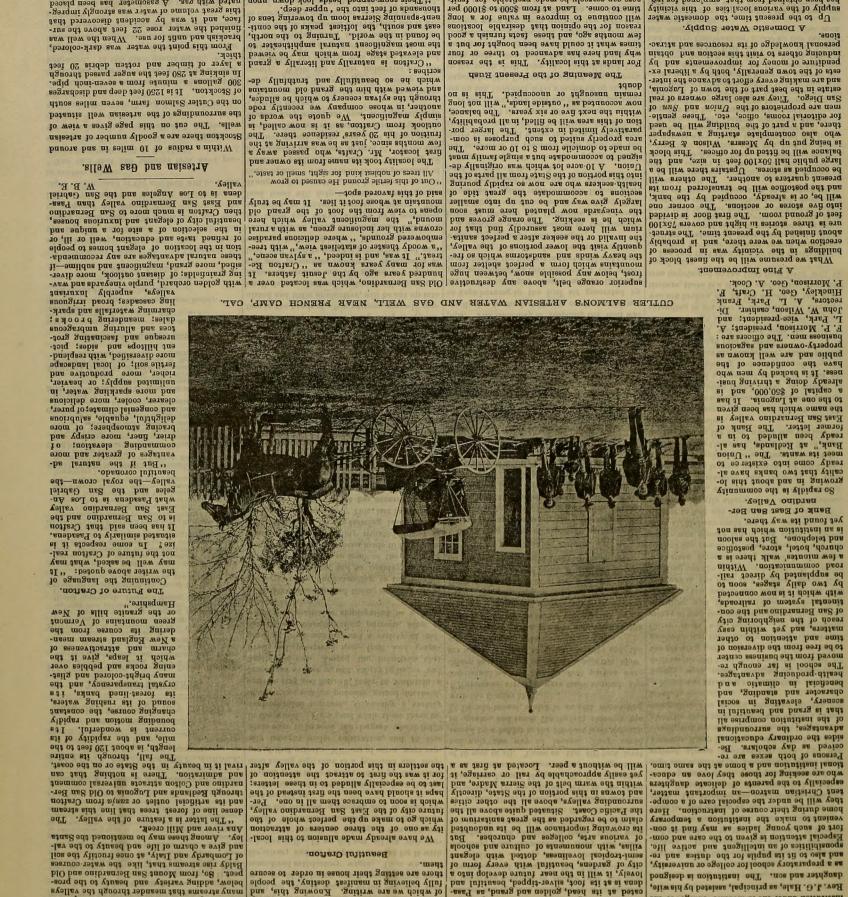
Merak (A) \*

Phegda (y) \*

edt of sonsister to

Hrom. However was dark-colored, bracking from this point the water was dark-colored, bracking and unfit for use. When the well was finished the water rose 22 feet above the surtace, and it was by accident discovered that the controlled that the series of water was atrougly impregnent of the controlled in the bullding, seen in the out, and light and the case on the gas is kept bureing all night and the controlled that the controlled in the transfer in an independent biper brisis a mineral water and has been found very valuable as a remedial agent in the treatment valuable as a remedial agent in the treatment valuable as a remedial agent in the treatment.

consolidation, and therein to the state of t institution under the immediate oharge of the Rev. J. C. Hale, as principal, assisted by his wife, daughter and son. The institution is designed ence to its present cooupation, and nothing has been omitted which could add to the conven-ience and comfort of the pupils. It is a private ing was designed and erected with special refer-Which occupies the beautiful site next adjoin-ing that of the Terrace Villa hotel. The build-



The Meaning of the Present Rush why lead here here at the resent the reach the form the Meaning of the Present the reach the r

Thuekiey, Geor, H. Chole, F. Gook, H. Chole, G. M. Chok, G. M. Chok, A. Morrison, Geo. A. Cook, A. Marte, Geor, H. Chok, A. Morrison, Geo. A. Cook, buildings in the vicinity was in process of erection when we were there, and is probably about finished by the present time. The structive inte is three stories in high and overer 55x100 feet of ground room. The first floor is divided into five stories or sections. The corner one into five stories or sections. The corner one and the postoffice will be transferred from its mill be of the stories. Upstaired the bank, be compressed as stories. Upstaired the bank, be coupred as stories. Upstaired the bank, be coupred as stories. Upstaired the will be a factor of the confices. This book barbon is being put up by Messars. Wilson & Berry, to editorial rooms, Mison & Berry, who also condemplate starting a newspaper is being put up by Messars. Wilson & Berry, for editorial rooms, office, c.c. These gentler, and a part of the Union and Sun of the Oralization of the town of Lugonia, and are making every effort to advance she interstand by penditure of nomey for ingressed and by indensity of ingressed and by indressed in the constitution of the

of the various of the conceptions.

Up to the present time, the domestic water supply of the various localities of this vicinity has been obtained from that employed for irrigation, but with the increase of population, and from the increasing evidence that a large and constened here, a company has recently been formed to supply the people with pure mountformed to supply the supplement and supplem

[NO. S.—CONTINUED.]

Belleview Academy,

(Editorial Correspondence.)
In continuing our notes upon the improvements in and about Lugonia, we would not ouit

Southern California.

into three eight-hour shifts, and two Burleigh form the rescuing party. They are divided from the most experienced miners on the lode, hard porphyry. Sixty picked men, selected The material through which they are driving is endeavoring to reach the imprisoned miners.

came alive the miners employed on the 800 gized for their perseverance and bravery in res arrived almost asphyxiated from the gas. Foreman Roger Pendergast and Shift-boss John Grant, and the men with them, are highly euloosge, Pignalia found men employed on that level at the station. They quickly boarded the cage and ascended to the surface, where they On reaching the 1300 station with the was descending, a danger signal of 10 bells was rung for the station of the 1300 level in the and run it down to the 1300 level. While he discovered the odor of smoke, which indicated that a fire had broken out at some point underground. He immediately boarded the cage ending through the shaft, and leaning over an increase in the naual amount of vapor ased, the following detailed account of the first discovery of the fire was obtained: Lawrence Pignalia was on the surface with the cases at increase in the evening. He detected an armount of the contract of -bisdus tanwemos had mrats tern edt noqu tas and Lawrence Pignalia are highly commended for their heroism. After the confusion attend-Foreman Roger Pendergast of the Savage drills are used.

for the men on the cage, which was the last lot gas. This is reckoned to have been the most daring feat on the Comstock, but it was life or death Frank Layton, were carried out of the hoisting-works on stretchers and removed to their rooms, having become insensible by smoke and surface. Shortly afterward he and his fireman, smoke was coming out of the shaft Engineer John C. McLean could not see the rope or in-dicator to find out when the cage reached the with stern determination, could have accom-plished the rescue of these men, While the Nothing but the most heroic courage, coupled stated, at the end of the air-pipe in the line, crosscut at the Best and Belcher north line. attempts, and the men found, as heretofore relays of men this point was passed after several the rescuing party were several times extinguished when the vicinity of the Gould and Curry shaft was reached. By establishing Savage were made through the connecting drift on the 800 level, but the lights carried by Numerous attempts to reach them from the

prisoned men being found alive. that came up alive.

Opinions among miners are about equally divided in speculating on the chances of the im-

ranning at a high rate of speed, and rate and a series is so and a series and water sent into the mine is powerful surface air compressor, which is kept are being continually sent into the mine by the ris deer to ylqque lulianod s bas retew looo

men imprisoned on the 1500 foot level will be timbers, there is a strong probability that the extending in the face of the drift. As this pipe was not broken off by the caving of the shaft forced through a four-inch wrought-iron pipe,

The Comstock Mining Disaster.

at the head of the incline on the 1500-foot level of the Gould and Curry mine on the On Friday night of last week, a fire broke out

El Dorado tunnel, which is an adit connecting an upraise, and reach the surface through the had only one way to escape. They could ascend by a ladder to the 250-foot level through mine were Jonecy Morgan, W. C. Carpenter, R. C. Bruce and Andrew Bean, making a total of 15 men in all. Those on the 400-foot level Gould and Curry, as follows: Biohard Bennetts, W. James, H. T. Carab, W. Williams and Jas. Trembath. On the 400-foot level in the same Kennedy, Foss Hamilton, P. Eddy and Ohas, Dougherty. In addition to these, there were five men imprisoned on the 800-foot level in the were Edward Jeffrey, Martin Tregallia, John of the dense volumes of smoke from the five. The imprisoned miners in the 1500-foot level station, but the men could not see it on account They frantically rang the signal bells. The cage in the Bonner shaft was at the 1500-foot driving an upraise above the 1500-foot level. There were still six men delow employed in through the Savage incline to the surface, 600 foot level in the Gould and Curry escaped Best and Belcher came up on a cage through the shaft, nearly suffocated. Those on the The miners on the 1300-foot level in the

mine was flooded with fresh sir. driven back by the smoke, although the blow-ers were worked to their full capacity and the imprisoned miners, but the first parties were with the Bonner shaft.
Numerous attempts were made to reach the

all the men and brought them to the surface. He jumped on the deck of the cage and ran it down to the 1300-foot level, where he warned issuing from the shaft he was on the surface. Lawrence Pignalia, a miner employed at the Could and Curry, is loudly commended for his courage. When the smoke was first detected

Five Bodies Found.

efforts to resuscitate them by the edication were enough and artificial property and artificial property of the contract of th tunnel line. Their bodies were still warm, and They were evidently saphyxiated while endeav-oring to escape, as the five were found scat-tered on the way leading to the adit on the dead about 200 feet from the tunnel line. Their names are: John Trounce, Joneey Morgan, R. C. Bruce, W. C. Carpenter and Andrew Bean. ne the 400 foot level, finally found five of them A rescuing party of about 20 miners, after beneairgmi mem end character attempts to reach the men imprisoned

the fire. One of the rescued miners informed your correspondent that they could not secerton bluos elbass a said tosh edt ot enb ylleido yd betreneg ris Inol edt ni gninnud tqed ed bemodri szenim benneg odt. pipe. The difficulty in reaching the men was vis edt to teltuo edt ta redteget belbbud evew About 11 o'clock, after three attempts, they reached the face of the drift, where the men with two other miners, succeeded in rescuing the five men imprisoned in the 800-foot level. made by physicians, but without success. Roger Pendergast, foreman of the Savage,

the fire, one of the resoned miners informed the fire in the fire is a strong probability that the vortespondent that they could and Courry or Savage, and therefore became uncertain a build be the search of the fire is and therefore became uncertain.

A bulkbead was constructed in the connect and dated Virginia mine (sad the Bonner and consolidated California and Consolidated California and Consolidated California and Consolidated California and Virginia mine (sad the Bonner abatic the connects with it and the Consolidated California and Virginia mine (sad the Bonner abatic the search of the Bonner abatic the connects with it, and descended a formal connects with it, and descended a formal connects with it, and descended a for the Later of the Later California and Carry) on the Savage of resoning them were obscilled the Bonner abatic supplies the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the miner and Virginia mine (sad the Bonner abatic the search of the Later and Bonner abatic the search of the Later and Miner the search of the miner of the Later and Miner the search of the Later and Miner the search

Rounding Out Our Industrial Propor-

took to afforded, or promised to afford for the time being, the largest profits. First it was gold: Mining for that metal We adopted such course because the calling w cumstances was not an unwise policy to pursue. many were neglected; and this under the cirbusiness, pushing them with vigor, while the from the first presented the spectacle of what might be termed a lop-sided State. We have at different times engaged in a few branches of Industrially considered, California has

make the business a success, and to some ex-We exerted ourselves to the utmost to ruo ton saw ti gainim to donerd tadt gains for silver; and no people ever went for it with a better will. If we did not all get rioh purconsidered satisfactory wages. Then we went they would no longer pay the masses what were antil the placers became so far depleted that paying the best, it took the lead, and kept it

which give profitable employment to a large chanical and manufacturing pureutts, some of growing, wine-making, and a variety of me lived and prospered were fruit and grapeprecations existence, and others to linger and finally die out. Among the industries that some to stay and flourish, some to maintain s in the world. For a good while these three in-dustries ruled supreme. Gradually a variety of other and smaller pursuits gained foothold, per of that cereal. Millions of acres were rapidly brought under cultivation, and in this State were to be seen the largest wheat-fields urated, grew to be a great industry, California soon taking high rank as a producer and ship-Meani meed gaived gaisist-teedw emitaesM tent we did so.

there, engaging in some branch of business ovil bas sawot bas seities and towns and live become oultivators of the soil, adding to the productive wealth of the country; others will These new arrivals are, for the most part, peo-ple of means who come with the purpose of buying land and settling upon it, These will manent population, and that of the right kind history of the State, because it will bring ner-what we most need, large additions to our perimportant movement that has occurred in the well as the fruit and the farming lands having been enhanced in price. This last is the most fluence; the more eligibly situated forest as All the settled and even some of the settled are parts of the State have been made to feel its intowns and hamlets, and to country as well, amount of labor. At last comes the land boom, confined not to the larger cities, but extending to the smaller

supplied we can make and grow a great many articles that have heretofore been neglected, always most stood in need of. With this consumption. This creates for our products, of whatever kind, a home market, the thing we It augments population, which in time augments condition as regards surplus laborers. The land boost will help to boost everything else. the cities and towns, always in a congested mote subdivision of labor. When homes in the country can be easily obtained, men will leave land will tend to equalize population and pronumerous families and the scenes of a diversi-fied and prosperous industry. Subdivision of mall farms, destined to become the homes of fore in the hands of a few persons, sparsely pop-ulated and little productive, will be out up into fornia, which, instead of being held, as hereto will come: First, it will lead to the subdivis-ion and sale of the large tracts of land in Cali-Out of this influx of population much good need be, many of them being able to live

While the larger industries will not With numerous inhabitants, so much more being required, everything will develop more a foreign market. scause they would not bear transportation to

be more widely distributed, even and well sus-tained. And thus will the industrial lop-sided-ness of California disappear, giving place to grand, harmonious and symmetrical proportions. up and prosper here, as in other countries.
There will be expansion everywhere, but it will that they will in great variety take root, grow be retarded, the smaller will be so nourished

тіпев were 3800 tona. THE ore shipments last week from the Bel-cher, Crown Point, Kentuck and Yellow Jacket



DEWEY & CO., Publishers.

Office, 220 Market St., N. E. cor. Front St., S. F.

Terms of Subscription.

Annual Subscribtions, \$8. Year with an experience of interesting must be paid without cash in advance. All arrestings must be paid for at the rate of \$3.50 per annum.

Advertising Rates.

Large advertisements at lavorable rates. Special or reading votoloss, legal advertisements, notices appearing in extraordinary type or in particular parts of the paper, at special rates. Four insertions are rated in a month. Addresss at litterary and business correspondence and braits for this paper in the name of the firm.

Entered at S. F. Post Office as second-class mail matter Our lakest forms go to press on Thursday evening.

DEMEK W. W. S. BWEN. O. B. SEGONO.

SCIENTIFIC PRESS PATENT ACENCY.

SAN FRANCISCO:

Saturday Morning, July 2, 1887.

#### TABLE OF CONTENTS.

Gate; Knight's Reversible Water Wheel, I. Cutler Salmon's Artesion Water and Cate; Knight's Reversible Water Wheel, I. Cutler Camp, Cal., S. Fig. I.—Evertive Position of the South Artesan Dismond Manes, Fig. 2—Plan of the Kimberley Dismond Mines, South Athera, D.

EDITORIALS.—Independence Day: West Point District, Knight's Reversible Water Wheels, Foundaring Mining Acadente, I. Passing Events; Boundaring Mining Acadente, I. Passing Events; Boundaring On Industrial Proportions; The Com-vock Mining Acadente, A. Dismond Mining Boundaring Mining Salman Mining Mining Bureau Mining Mining Mining Bureau Mining Mining Mining Bureau Mining Mining

Ooktehutions, 5.

GORRESPONDENCE.—Relies of '49; The Monterey Gold situes; The Acton Simes; The A of Astenomy, S gonetien Galifornis, 9.

MECHAUCAL PROCEESS.—Solder and Soldering; There Siminkare in Castings; Scientifying,
Iron; The Evolution of Inventions; Iron failtrend Ties,
New Processe of Annealing Wire; To Defect the Motion
of an Engire on the Foundation; English Steel; Estiof an Engire on the Foundation; English Steel; Esti-

BUGINGERING NOTES.—Electric Accumulators.

Broging Progress; New Bailway Sobemes in Nornathry Gastings, 6.

SOIEMTIFUC PROCRESS.—The Northern Lights:
SOIEMTIFUC PROCRESS.—The Northern Dan Gold
Leaf, Absorption of Mittogen from the Amosphere;
Silver in the Volcanic Ash from Fruption of Cotopast,
In 1885, Tuning an Organ by Telephone; A New Decifort; Simple Test for Gold; Fine Platinum Wire; A Fash
ber; Simple Test for Gold; Fine Platinum Wire; A Fash
Magnifying Lens, 6.

Engineering trees, Y.

Way, Bridge Tremfe, T.

To Be ink Type Writer Ribbons; Steakite (Sonpstone)
for Wall Fuish; Coal Ashes; Paper Type; Beible Snails;
Comeat to Political Work; Perfect Than Babitish Metal;
Shooting in the Bark; Glass for Sandpaper, Y.

The Yespot, For Kheumstian; Calvaniam for the AsThe Yespot, For Kheumstian; Calvaniam for the As-

phyxiated, (... MINING SUMMARY—From the various counties of California, Nevada, Arizona, Colorado, Idaho, Mon-firsh Wyomin, Sevada, Arizona, Colorado, B-9

tane, New Moxico, Oregon, Usin, Woming, 8-9 MINING STOOK MARKET—Sales as the San Francisco Stock Board, Notices of Meethings, Assess-ments, Dividends, and Bullion Shipments, 12,

### Business Announcements.

Mining Property—G. B. Rober son, Yreka, Cal.
Ore Concentrator—J. Z. Tibbits, Astoria, N. Y.
Mining Men Wanted.
Dividend Voltee—Germen Savings & Loan Society.

### Passing Events.

cape. An account of the accident will be found fate of the miners who were unable to esin suspense for several days concerning the among mining men. The community has been the topic of conversation for the past week The dreadful accident on the Comstock, by which several miners lost their lives, has been

nesteal Ani bestellingm guied teerest in Alaskan chased largely of stock in an Alaska mine, and sent an expert to examine the property, proves The fact that the bonanza firm have purin another column.

qu tuq gaied ere ellim-streup wea to redana A well and others are being prospected or dequartz. Some of the mines have been doing

ing sheed in better shape than ever before. The business is perfect shap formerly, as it is run on a more economical basis and on business -Og ei gninim straup etate gint al in different parts of the coast and more are con

representative of the industry. the Mining and Scientific Press, which is the in mining on this coast can afford to do without the Press, and take occasion to suggest that this is the proper time to renew old subscrip-tions and send in new ones. No one engaged We begin Volume LV with this number of

by a light winding rope, at first with a hand windlase, then with a whim, and later by steam-power. So great was the prejudice against ran upon a standing wire rope. The rope was fastened at one end in the claim, and at the other on the surface. The bucket was hoisted by means of a bucket, bung by a sheave, which The next method of removing the ground was

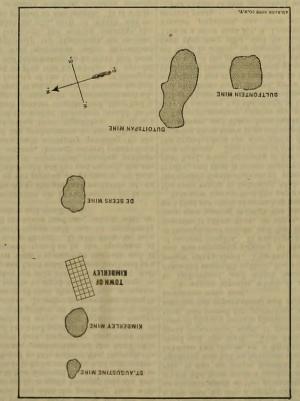
either by the caving of the ground or through, not, see long, not, sither by the caving of the ground or through the avarice of the digger, the roads became undermined, and not infrequently a load of earth, with wagon, mules, driver and all, would be precipitated into the claims below.

The next method of removing the ground was tor the poor yield to the early diggers was that the method of diamond-bearing ground supereded the old prices at which the diamonds were bought method of dry sorting; and the percentage of the diamonds were far below their intrinsic value. This was, diamonds saved was largely increased, thus their intrinsic value. This was, diamonds saved was large percentage of diamonds are from Europe came by had been thrown away while the old dry sort.

Diamond experts from Europe came by had been thrown away while the old dry sort.

vent the diggers from destroying it. steam-hoists that the first engine had to be kept under an armed guard, day and night, to pre-

dated into companies, in order to reduce the cost of mining, but more especially to make it possible to work the mines at all. The depth



FIR. I-RELATIVE POSITION OF SOUTH APRICAN DIAMOND MINES.

The deposit of diamond-bearing ground in sonces, and, as they were mostly of a persua- ing was in yogue. The debtis from the Kimsion generally and justly oredited with great
cannon in all tradings, more capecially of their
from Fradings, more capecially of their
from Singh Singh

the business of diamond-buying was soon re-

for the Horitz and sixpens to seven some the owner sold claims and sixpense and six Section C the Daly mine adjoining the Onta-rio mine, Utah, R. C. Chambers; In 1869, the famous "Star of South Africa" was found by a Hottentot. It weighed 33 carats, and was sold for

550 feet long and runs from north to south. east to west, while the shorter axis is about

"Blue" ground, was a red, sandy soil, and formed a low mound, a few feet above the sur-The surface, above the diamond-bearing or

The surface was originally blocked off into about 20 feet. to dageb ent as thats a mi banol ne rounding plain. The first diamond is said to

1500 licenses to work claims had been granted. claims of 31 feet square, and within a week from the discovery of the first diamond, about

can Exploration Company, and leased to the mines are owned by the London & South Afriment a monthly license fee of ten shillings for each claim. The Du Toits Pan and Bultfontein der the old system of paying to the Governand Kimberley mines are held and worked unmines, was purchased by the Government of the Cape Colony for £100,000. The De Beers all the mines. The farm, on which are situated the De Beers, Kimberley and St. Augustine

In 1873, Kimberley had grown to be a town

One of the claims was was also thrown open to the public, so that a digger was entitled to locate two claims of 31 feet square each, for which he paid a monthly 31 feet square for seven shillings and sixpence per claim. A little later the De Beers farm

farms looking for diamonds. Early in 1871 a Boer named Van Wyk found diamonds upon his farm. At

berley. At the close of 1870 the Dutch or Boer farmers were dig-ging about the surface of their

cursors of the famous mines at Kim-

ers, It was a gay scene, but the work was cruelly unsatisfactory

on tables the products of the rock.

and huke of every size and shape, to concery populated while sud among the trees, while men stood by the river, half naked, rocking cradles, with others esgerly sorting and searching others agenty stating and searching others.

magic, densely populated with tents of the Vasl river suddenly, as by oitement. The rush to the new fields is described as follows:

for £12,000. Tinally, it came into the possession of Lord Dadley. The discovery of these diamonds set the whole country in great ex-

£400 to Van Niekerk, who, in turn, sold it to merchants in Hope Town

nounced it a diamond of remarkably fine quality

The first diamond is said to have been found in 1867 by some Datch children as farm near. Hope Town, 90 miles south of Kimberley. It passed into the hands of a Datch farmer named Van Miekerk, who gave it to a noted hunter named O'Beilly to take to the coast to sacerain what it was. After considerable trouble an Amsterdam merohant was consulted and pronounced it a diamond of remarkably disconsility.

Danot need evad ot bias si bnomaib tern edT Early History of the Mines.

pany to examine gravel mines there. He re-turned to California last summer, but is now in Africa again. It was during his last trip that he visited the diamond mines and gathered the facts which are given in the paper from which we onote.

neers. Mr. Williams is well known in this State in connection with the management of hydraulic mining properties, He was sent from here to South Atrica by an English com-

tion of the Kimberley mine, taken from the paper by Gardner F. Williams of Oakland, Cal., be-fore the American Institute of Mining Eugi-

ings printed herewith. In last week's Press we gave a brief descrip-

of these mines is shown in Fig. 1 of the engrav

There is also directly west of the Kimberley mine a small deposit called St. Augustine, which has been prospected only, and can hardly be olareded with the others. The relative position

the center. These are named the Kimberley, De Beera, Du Toit's Pan and Bultiontein mines.

There are four large diamond-bearing deposits at Kimberley, all lying within a radius of one and one-half miles, having the De. Beers mine as

and the climate exceedingly hot in summer portion of Arizona. The elevation is 4000 feet,

nected with these towns by rail. The mines are in a desert country resembling the desert

Port Elizabeth, on the east coast, and is con-

The diamond mines of South Africa are situ-ated in Griqualand West, a part of Capo Colony. The town of Kimberley is 640 miles northeast of Cape Town and 450 miles from Port Elizabeth on the cast cast and

Diamond Mining.

we duote.

and disappointing.

The river diggings were the pre-

sorted or searched for diamonds. The diggers, in the early days, are said to have made little coarse screens of different fineness. That which was left in the screens was placed on tables and The original method of working was very simple. The surface-earth was passed through license of 10 shillings. One of the claims was used as a dump for the debris from the other.

in the early days, are said to have made little mide to a compare and camps were nearly days, are said to have made ittle method of washing the compared than expenses, although an enormous pertent. In 1876 the method of washing the between every pair of diamonds was found, One reason served, In 1876 the method of washing the between every pair of diamonds was found, One reason served. In 1876 the method of washing the between every pair of diamonds was found, One reason served. In 1876 the method of washing the between every pair of diamonds was found, One reason served. In 1876 the method of washing the between every pair of diamonds was found, One reason served. THE Iron Hill mine of Dakota disbursed nearly made up the denciency.

strictions, while the increase in quartz mining

a slight falling off due to a number of gravel reserved aritt claims being closed under legal re-

May 31, 1887, \$14,701,350.04. This shows but

of this city, for the year ending May 31, 1886, was \$14,813,862.50, and for the year ending

Gold Yield, The output of refined gold from the Selby Smelting and Refining Works

county, Oregon, John Switzer; French chalk from near Visalia, Tulare county, C. C. Harlan.

very rich, from the Nevada county, M. Attwood; mine, Nevada county, M. Attwood; gold quartz, showing free gold, and

eral interesting minerals and Indian relies, from Tulare county, M. Bra-verman; gold quartz with free gold

veras county, Geo. L. Brown; sevimen of auriferous pyrites from the Lockwood mine, West Point, Cala-

fragment of an aerolite which fell in France, F. E. Monteverde; crys-tallized gypeum, San Bernardino county, F. E. Monteverde; fine spec-

from various levels and tunnels of en samples roofing slate from Placerville, El Dorado county, Reeg & Landecker; 18 specimens silver ore

sulphur, semi-opal, etc., from Lake county, donated by H. S. Durden, acting secretary of the Bureau, sev-

Several specimens of obsidian, Museum of the State Mining Bureau are the following:

Among the recent additions to the Mining Bureau Contributions.

(To be continued.)

two sections having been shown in

Ізар меор'я Ракза,

this country.

Fig. 2 is a plan of the Kimberley mine, the

usually two tracks, one car descending while the other is going up. The hoisting is done by small hoisting engines similar to those used in

in the French company's claims) the ore car itself is hung under the serial car, and is easily uncoupled as it reaches the surface. There are

into a chute on the surface; or (as is the case

manner: Two wire cables are stretched lightly manner: Two wire cables are stretched lightly from an anchorage on the obttom of the pit to one on the surface. These form the track on which runs a car with grooved wheels. To this is attached a self-dumping bucket which dumps

gniwolfot off in betouttenes amera faires lo Company, and a few smaller companies which cover all the diamond-bearing ground. The present method of hoisting is by means

The principal companies are the Kimberley Central Diamond Mining Company, the Compagnie W. W. Osh Sancard Cap, the W. M. Hall Company, the Standard Diamond Mining Mining and Presented September 2 of the W. M. Hall Company, the Standard Diamond Mining Mining September 2 of the West September 2 of the Mining Mining Mining September 2 of the Mining Mini

n open quarry made the consolidation of clisims in larger blocks an absolute necessity.

to which the individual claims had been worked

From 1877 to 1879, the claims were consoli-

## Beientifie Progress.

### The Northern Lights.

When, in 1792, Franklin succeeded, through a kite sent up into a storm-cloud, in order, in 1792, tranklin succeeded, through an electric spark at the extremity of the cord, which had been made a conductor through that the carterinity of the cord, which had been made a conductor through that lightning was but an immense electric discharge between two clouds, or a discharge between a great importance, since it connected with the train, it was but as in immense electric discharge great importance, since it connected with the them was of great importance, since it connected with the law or physics ectain phenomens which, until nothing but supernatural and mysterious manich and physics celesing between the supernatural and mysterious main testions were seen.

The survors borealis, which is more among of inauspitions ever such at the historias more origin as lightning, that it is more the card of an arm at a been heard. The survors borealis have the vatible manifestations of atmospheres, armies have the various and that it is due to slow movements of the various and that it is due to slow movements of the various and that it is due to slow movements of the various and the the stator of viorable various ever heart house the survors and of the survors and of the various. The effects of the result of viorable various, and that it is due to slow movements of his bat main the rects them, and this is heat lightning. The survor and the sources are between them there is an intermediary their to serve any of the globe, to study of the survor and the they may offer, and to discuss theories, but in the survor and to discuss the that the survor and to the correlations of the poles. The survor and to discuss the correlations of the poles of the survor and to be surfaced in 1868 of the word of the survor and the discuss the survor and the discuss the survor and the discuss the survor and the survor

A Microscope Showing Perspective.—Mr. Burch has recently exhibited to the Royal Society of Ferst Erritors and of Design of the interest of the Royal Society of Ferst Erritors and the Royal Society of Ferst Erritors of the Jetrer's different protein and processing of the object to be examined, for the plane of the object to be examined, for the plane of the object to be examined, parks. All those who have looked into a microscope will appreciate the value of their into a microscope will appreciate the value of their foral lengths, that it is designed in 1874, the optical conditions becomes such that the sach the optical conditions becomes such that the fact of the forest lengths, the optical state. This proportion is in direct rate of the objects, whatever be their position on the object upon the optical axis. This proportion is in direct at the same direction, but which is to the first in the same direction, but which is to the first axis brings about a displacement of the object upon the optical axis in the same direction, but which is to the first in the same direction, but which is to the first axis brings about a displacement of the coal length of the same direction, but which is to the first action on this grant has a constructed of the flag principle, and has example of the flag principle of the flag

the antitioiently.

THINUKE THAN GOLD LEAF.—Though the produce leaves of that metal so thin that more than 900 are required to make a pile one milliproduce leaves of that metal so thin that more than 4000 are required to make a pile one milliproduce leaves of that more applied one milliproduce leaves may be obtained in another way. By electro-plating a known weight of gold upon one side of a sheet of copper foil of green dimensions, a costing of gold may be secured in moved, when the leaf of gold may be secured in another may be secured in a suitable by a simple estimated secured in the leaf of gold may be remained as unitable solvent, the copper may be remained as unitable solvent, the copper may be repaired and an another than in the copper may be repaired in the copper whose that the section of a millimeter in thickness that about the than one four-hundred at the consecution one four-hundred pages one four-hundred benefit part of the length of a millimeter—bundredth part of the length of a millimeter—bundredth part of the length of a millimeter in a shrickness or a thinness that as about one two—bundredth part of the length of a more than a page of a book, the thinness our corresponds to one page of a book, the thinness our corresponds to one page of a book, the thinness our corresponds as page of a pamphlet having more than a hundred pages.

A page TON OF MITROGEN WEOM THE AFMOS-TON-THE AFMOS-TON-THE AFMOS THE AFMO

ATERIA.—Soils were placed in vessels of glaced in vessels of glaced in vessels of glaced arthern-are, and in some cases were protected, in others exposed to air and rain, the rain-water being collected and analyzed, and the smount and mitric soid in the air being slace continued. The results show that vegetable determined. The results show that vegetable soils continued they are not supporting vegetable when they are not supporting vegetation.

mains soft, which can be used for tape, spindles and other like purposes. An onnee and a half an ounce of prusates of potsasium, half an ounce of brusates of potsasium, half an ounce of brusates of lead, are all to be well pounded and of burded together. The iron to be hardened and mixed begether. The iron to be hardened is made well red-hot, taken out of the fire, and when it is again brought into the fire, and when it is again brought into the fire, and when it is assumed the necessary degree of hardened in this manner has, through the fire, and when it is to be cooled in oold rain-water, she when it is to be cooled in oold rain-water, with the soft compination of the hard skin more intimate combination of the hard skin with the soft sometimes that the old the soft way. For tape the temper she old the light yellow, or what is generally call-be old-fashioned ways. For tape the temper should be light yellow, or what is generally call-be old the light yellow, or what is generally calling and to have a seen of steel thus treated to be succeed at the cold in a partened to it is not in the soft which has a spanner on the soft on it is end it in the soft upon the soft in and it is to soft upper half can be completely usin that the soft upper half can be completely twisted of the soft upper half can be completely the soft upper half can be completely the soft upper half can be completely as serow-thread. It will the soft upper half can be completely the soft upper half can be completely the soft upper half can be completely that the soft upper half can be completely that in the soft upper half can be completely that it is not man and the soft upper half seed to some the seen that it is not in the soft upper half seen the soft in the soft upper half seen the soft in the soft upper half seen the seen that it is not in the soft when the soft upper half seen the seen the seen that it is not in the soft with the soft upper half seen the seen

main and the lower hard one, which will remain unbroken and unesflected.

The Evolution of Y Luventions.—It is interesting to study the greades of exclusion, by find-ing out whether would not do; and second, the spread process of connection, by find-press to him the the straining perhaps from or connection, running perhaps for over a century, through several generations of inventors, each evidently upontitue, by the failures of hist predecessors to the extent, at least, of avoiding their resents has extent, at least, of avoiding their resents has the extent, at least, of avoiding their resents has the failures of secentarior inventors and exceed the extent of extent o

Diabled results of to-morrow.

IRON EAILROAD TIES seem to be gradually coming into general use on English railroads. A late issue of the London Ironwonger says that it is quite probable that iron ties may entirely take the place of wooden ones, and that tiesy take the place of wooden ones, and that it is quite probable that incetal may become a substitute for wood in metal may become a substitute for wood in the generer all over the world, owing to the other ways. "Timber is gradually growther leekled may be of the which Morth America and teep incent of trees are decomes extreer and deserverion of trees are timber becomes eastered and steel attended we of iron and steel, at such as ornamental excluding so of iron and steel anch are present very low prices of them will stimmlate invention very low prices of them will stimmlate invention as to these may always and a seel and a seed the present very low prices of them will stimmlate invention as to these new adaptations."

Wew Process of Annealing Wire.—A new proces of annealing wire consists in coiling the proces of annealing wire consists in coil or drum, impleding the wire and core in sand or its equivalent, surrounding a central open space, subjecting the whole to heat with the wire thus imbedded, and then allowing the whole to cool before removing the wire from the imbedding makerial. While cooling, if we ressed is dipped has been patented by Wm. H. Sawyer of Provisable been patented by Wm. H. Sawyer of Providence, R. L.

TO DETECT THE MOTION OF AN ENGINE ON TITE FOUNDATION.—To make the motion of an ITE FOUNDATION.—To make the motion, whittle a strick to a flat edge and place it in contact with the bed, supporting it near the end thus in contact upon a rigid fulcum. The motion will be treatly multiplied upon the free end and will be to the actual motion as the total length of the lever to the distance between the fulcium and the end in contact,

Exerner Steel.—It has always been the boast of English papers that the steel and boast of English papers that the steel vorkers of English date auperior to those of any other country; but this does not harmonise very well with a statement in the Ivon-monger, of London, that the year past the Entitlah War Office has been accustomed to record sort to Solingen for its swords, cutlasses and sword bayonets.

ESTIMATING CASTINGS.—To estimate the Weight of new castings, the width in quarter burg recommends the following plan as the property in the commends the following plan as the property of one of one figure for decimal—weight managed the core re-

MECHANIGAL PROGRESS.

Solder and Soldering.

The process of uniting two pieces of the same or different metals together by the use of different metals together by the use of some ordifferent metals together by the use of some other metals or allowed to the state of the use of the same of th

### Uneven Shrinkage in Castings.

We olip the following from the correspondwe of the Boston Journal of Castings,
ence of the Boston Journal of Commerce.
It is really delightful to hear a foundtyman all the
trouble resets with the pattern or the designer
who had the pattern made. A casting will not
the pattern made. A casting will not
the pattern made. A casting will not
the pattern made. The trouble is
that some of the thin partie cool first, and the
straining the casting out of alappe. It is useless to take on about the iron not being fit to
straining the casting out of alappe. It is usethe word in the casting when it is cooling in
the mod, so that it was too hot and we should have
the moid, so that it will come out straight every
time. It is an old saying that it affects a crookthe moid, so that it will come out straight every
time. It is an old saying that it takes a crookthe moid, so that it will come out straight every
time. It is an old saying that it the other.
The ceating will warp into shape one way as
the casting will warp into shape one way as
the casting will warp into shape one way as
the result is that a true casting is shaken out
of the moid, so that he arms are broken a crookleys that have very small arms, with heavy
the result is that a true casting is shaken out
but a stop to the breaking of wheels and pulwheel is set and time, are broken by unequal cooling;
the result is that a true casting in every
working the arms of the pattern to lear slightly
what was the mattern at the pattern to lear slightly
but a stop to the breaking of wheel saw y from
the one side. The designer is more to blame
bad looked to his pattern, he would have seen
about his iron not being just right, when, if he
had looked to his pattern, he would have seen
shoule sa thice alsers on only such
the inner right, when that the case
the one side. The designer is more to blame
sades as the mattern of the west
edges not being in sight were not not noticed by
the pattern-maker.

Summer of the breaking in one be seen
edges not being in sight were not

A FLAT MAGNITURE LEAS.—A scientific novelty is a lens which magnifies, yet is pertectly flat on both sides. It is made at Jens by the manufacture of Prof. Abbe's new optical glass. The Jens consists of a single disk whose density varies so that its refractive power decreases regularly from the surface inward,

HIME PLATITUM WIRE.—It has been demonstrated that platinum wire may be drawn so that blatining wire may be drawn to be invisible to the naked eye, all cough its presence upon a perfectly white card can be detected by the touch, and can be seen by the said of a small magnifying glass when the card is held in such a position that the wire casts a hadow.

SIMPLE TEST FOR GOLD.—Take a piece of dint and rub against it the metallic object to the tacked, until the latter leaves a sufficiently marked trace upon the stone. Upon bringing the spot, the latter will remain intact if it has been made with gold, but will disappear if the contrary be the case.

Wucanized India-Rubber.—According to quently observed in stricts made of vulcanized quently observed in stricts made of vulcanized quently observed in stricts made of vulcanized undia-rubber; is due to the slow formation of almospheric acid by the section of the archole when the prevented washing be prevented by occasional prolonged washing dered slightly alkaline (Jour. Pharm., April 15, p. 417). In this way he has been able to maintain drainage tubes in a supple condition maintain drainage tubes in a supple condition in a sound of the archiver.

Heerrivo Mixture. A liquid invented by Legering of Geneva, Switzerland, for use as a disinfectant, of Geneva, Switzerland, for use as a disinfectant, answers well as a freezing mixture for hardening microscope specimens. Sulphur dioxide and carbon dioxide, having bean mixed and cooled and compressed until liberated, they are liquid, are stored in siphons. When they are liquid, are stored in siphons. When liberated, they rapidly evaporate with great recury may be frozen and animal or vegetable cury may be frozen and animal or vegetable as easily managed and more effective than ether, the odor being the principal objection.

A New Decimal System,—There is a decinal on the following principle: The day has ten on the following principle: The day has ten on the following principle: The day has ten on the following principle: The aconds and each minutes, each minute ten seconds and each second ten rays—thus dividing the whole day people of the circle. Herr Moder of that applied to the circle. Herr more to that the year into ten more of 35, the uneven ones of 37 days each. The advances of this decimal system are placed in yaddence, and the inventor hopes to see the game adopted before long, in spite of the presence of the circle o

mingham as pania de Caraguez.

Tuning an aper asya that a novel experiment mingham apper asya that a novel experiment was recently kried there with the telephone. A letter was received by Messrs. Rogers & Priestly, musical exterers in that town, asking the arms to send an organ to suit a planoforte to a room at Moseley, where a concert was totally at a place that night. The firm was totally at a less to know the precise tone of the piane, and place that night. The firm was totally at a less to know the precise tone of the much to their subject outly despaired of being able to comply with the demand in time. However, much to their subject outly despaired of being able to comply with the demand in time. However, much to their subject of the nonitate with the people at Messrs, Rogers & Priestly asked that one of the notes of the pian should be struck. When this was done, the sound could be struck. When this was done, the sound could be distinctly heard in Colmore Row, and by gradually reducing the pitch pipe the tones of both instruments were made to correspond.

SILVER IN THE VOLCANIC ASH REGRIF, GORDE, REGRIF, TROUR OF COTOPEANT IN 1885.—J. W. Mailal and yood the sate collected at labits de Carazurov of Cotopeant in 1885.—J. W. Mailal field to the depth of several inches. The specimen was a light brownish-grey, very finely divided, mobile powder, soft to the short from of such the self of the microscope. When strongly pasted, it turned dark iron or were distinguished by aid of the microscope. When strongly pasted is destricted by a strongly pasted by a strongly pasted as the microscope. When strongly leads to a nearly black slag. Single, may be self self the self, or short two-diths of sirver was present to the each, or shout two-diths of alver in the phout one strongly near the self or short of the self, or shout two-diths of alver elected during the strongly near the self of sirver elected during the cruption, in view of the vast masses of volcanic eruption, in view of the vast masses of volcanic eruption, in view of the vast masses of volcanic eruption, in view of the vast masses of volcanic and as as indicated by the fall at so distant a point as Bahia de Caraguez."

greater than the quantity of nitrogen existing as ammonis or nitrogen oxides in the air or rain. In fact, the rain removes from the soil in the form of soluble nitrates considerably more nitrogen than it brings in the form of ammonis. At the same time, the amount of nitrogen abute the rain the case of soil exposed to rain than where soil is protected, probably to wing to the greater activity possessed by the nitrogen-absorbing organisms under the former conditions. In the majority of cases, a notable converted in the nitrogen is converted proportion of the absorbed nitrogen is converted into nitrates.—Berthelot, Compt. Rend.

Our coast. We have seen and carefully followed the experiments conducted by Prof. Oscaperior. At a word he impresses the subject with the sides that he has lost the seeing ject with the sides that he has lost the feeling to he lost a seathesis. The hand may be hurned lost areasthesis. The hand may be hurned by Dr. Pearce, before a large audience, mainly by Dr. Pearce, before a large audience, mainly composed of doctors, the subject smilling; the composed of doctors, the subject smilling; the doctors conversed in the state the muscles became relaxed and prolonged it better, the muscles became relaxed and prolonged it better, the muscles became relaxed and prolonged it becomes the 'magnetic sleep,' the most urigoralists, the magnetic sleep,' we have scores of the state the muscles became relaxed and prolonged it becomes the 'magnetic sleep,' the most urigoralists, worn and the releasing tree in the structure, as the somes the 'magnetic sleep,' the most urigoralists and dever-tossed heads will in the letter, worn and fever-tossed heads will in the lumper, the want of which too often ends in standing the state of the subject in the structure, and the subject in th

or ago and experience already denouncing by voice, pen and press the "bause of narvotes, voice, pen and press the "bause of narvotes, so and press the "bause of narvotes, been broaded to scoount to this peculiar and pound to account to this peculiar and pound to account in some amoner to results found to account in some amoner to results on a magnetic fluid which, by certain "passes," became distributed downward from the brain in a suspection of a magnetic fluid which, by certain the same of a magnetic fluid which, by certain in a suspection of a magnetic fluid which, by certain in a suspection of a magnetic fluid which, by certain the brain in a suspection of a magnetic fluid which, by certain the brain of a condition. Practical acquare hold of the matter and say that it is not necessarily well. The decision of a person of a person of a contract of the control of the condition of the same of the condition of the control of the condition of the condition of the condition of the control of the condition of the c

mentioned giants exoceding IO and even 12 feet in hight, but these accounts have doubtless from tioned whether and it may well be questioned whether any of these individuals have there exceeded in stature the giant Winckelmelt, who is now exhibiting in firance, and who is awb is now exhibiting in firance, and who is a feet high. Dwarfs of 16 and even IZ inches are said to have existed, but these diminutive foreburds have been either immature or ill formed. A noteworthy instance of a very forestures have been either immature or ill formed. A noteworthy instance of a very enable and died in 1871, and never was born in 1789, enable of the celt of eveloped dwarf is the celt in pight. These two examples are selected by La Nuture of Paris as an illustration of the extremes between which human stature extremes between which human stature ranges.

The Texpor.—All women who are in the bath of the path of the path of the careless the cap of teas are warned against the careless habit of leaving any each of the careless habit of leaving any each of the care odd at an hour much later than or to be taken could at an hour much later that has been long standing contains does a great has been long standing contains does a great has been long standing contains does a great made with freshly boiled water is not hurtful made with freshly boiled water is not hurtful taken once or twice a day, but strong tea, or teach of made or twice a day, but strong tea, or the contains and the contains the contains and the contains and the contains a con

TOR RHEUMANTEM.—Dr. Vulpian states that salicylates thinking anicylate of lithis is more efficacious than subjected of sods in cases of soute and progressive subsoute articular rheumatism. It also has subsoute articular rheumatism. It also has some effect in chronic cases when a certain number of the joints are still deformed, swollen and pentiul. Salicylate of lithia may be given and pantiul. Salicylate of lithia may be given dissolved in water, in powder, or in unleavened bread, during or after meals, in doses of 50 centigrams. The physiological effects of the drugs are headache, giddiness and desiness.—
British Medical Record.

GALVANISM FOR THE ASPHYXIATED.—Dr. Brown-Sequerd, the celebrated physiologisk, says that he has discovered that the moment appears, and that the best means of resuccishing persons apply galvanism to onlyga or water, is to apply galvanism to the skin of the neck, a method he has accessfully employed.

is then dried, and subsequently pulverized. In its pulverized state it is introduced into a mold of the requisite construction to produce the desired article, type or block, and then subjected to presente to consolidate it and heat to render to presente to consolidate it and material. Finally the type is cooled while in the mold, so the art of the mold, so as to cause it to retain its shape and solidity.

EDIBLE SEALUS.—New Orleans is the largest of seases of causes it to reteam its the largest onesumer of smalls in this country. They are consumer of smalls in this country. They are onesumer of smalls into hot water, says a Southern epige out, and killed. Then they are weak solution of lye, which removes the slime, week solution of lye, which removes the slime, and the shells are cleaned with stronger lye, and the shells are cleaned with atronger lye, and the shells with a dressing of bread and pareley, and thus propared the smalls are lowed from the district the one water are removed from the district one must the district are removed from the district one must be one the small such the small such the small such the small such the shell may be put to the mouth a fork, or the shell may be put to the mouth and the small sucked out bodily.

CEMENT FOR DELICATE WORK.—For delicate or the same of th

OEMENT FOR DELICATE WORK.—For delicate work, such as emecing silks for lans, etc., the work, such as emecing silks for lans, etc., the such as emecing conent is much used by the Japanese: Take best finely ground rice-flour, nix with a little cold water, and then pour transfer to a clean enameled; saucepan, and boil transfer to a clean enameled; saucepan, and boil transfer to a clean enameled; saucepan, and superior to the cements generally used, and when well made is slmost transparent.

Better Than Babeltt Metal.—The Electric acts the confidence of Review gives the following as a lining metal superior to "babbitt"; Melt in a crucible one and a half gounds of copper, and while this is melting get a big lidle and melt 25 pounds of the and three of autimony; heat it red-hot and pour the two together and stir till thoroughly pour the two together and stir till thoroughly mixed.

SHOOTING IN THE DARK.—The difficulty of sighting rides in the dark has been ingeniously overcome by the use of luminous paint. The war-office authorities have had some of these sights under trial for the past six months, and sights under trial for the past six months, and pare the past six months.

PLASTER BUSTS and statuettes may be cleaned by dipping them into thick liquid cold scarch— that is, clear starch mixed with cold water— then drying them, and when the starch is brushed off the dirt comes off with it.

Glass for Sandparer.—Glass, polverised by plunging when red-hot into cold water, and then finishing in morters, is largely taking the place of sand in making sandpaper.

## GOOD MEALTH,

### Hypnotism.

Some attention has of late been called by the American press to the marvelous results attained by Trof. Charcots and other french exterine attained by Trof. Charcots and other french experimenters in this branch of psychio etudy, better known as mesmerism. Physiolans in England and terminary are likewise using this power in the treatment of some forms of mental power in the treatment of some forms of mental power in the treatment of some forms of mental hard and are treatment of some forms of mental hard and recommended for them, the ondition known has let a certain bor locality, andmiss fearlessly to the most severe operation, thereby escaping the risk too often attending the use of assableding the most limbs the study of mental science, or psychologen action of mind is worthy of close attention. The bypnotic state is best likened to the course action of mind is worthy of close attention. The bypnotic state is best likened to the four and its actions of any other, just as in sleep. Applied in the person performs of mind is mind becomes possessed of one idea, to the total exclusion of any other, just as in sleep. Applied in the person performs of one idea, to the total exclusion of any other, some and in the same would be were the person wide stan science we see around us, every day, and is a less degree we see around us, every day, in a large action of any less around us, every day, in the same would be were the person wide and it as less degrees we see around us, every day, in the same would be were see around us, every day,

waste, and the same would be were the person wide ways waste.

In a less degree we see around us, every day, and a professions it and a constituted in the forest and the botal accolusion of the professions in the forest account of the forest and appetite, and the forest of the forest and appetite, and a provided in the forest and a properties, and a provided in the forest and a properties and a provided at the forest and a properties, and a forest at the could be still persus, finally here it is not a provided at the forest and a surroundings; as influences for good or evil and surroundings; as influences they become a sometries. They may be so in different degrees, in men about one in five, and in women a sometries. They may be so in different degrees, and in a higher, degree as regards the sensitives. They may be so in different degrees, and in a higher, degree as regards the sensitives. They could not be surely or fully responsive as regards muscles, and in a higher, degree as regards the sensitives. They have not a some controlling of the eyesight is one of the steels and most cultivated of the interest and most cultivated their so is no indication of inneartal wash. Their heirs of is no indication of inneartal wash, does the could such.

Their hoirs of is no arise in in the decision of inneartal wash, does the could such. If the their is the service into innearest him when, in the heart is and in the heart in the instance in the service in the terest him when, in the heart is a service of a carreil and such.

USEFUL INFORMATION.

About Wire Ropes.

The circumference of a rope in inches should be taken as facon are incomes should be taken as the minimum size of pulley or dram in elect; it will answer to work them over, will answer to work them over, gives the maximum. Ex.—A No. 104, roper circumference = 2 inches. Hence minimum directions, twice that a facon minimum for economical wear.

To preserve wire ropes, paint with raw lineted, maximum for economical wear.

To preserve wire ropes, paint with raw lineted in the serve of the maximum for economical wear, lard oil and plumbago for this purpose, was, lard oil and plumbago for this purpose. In transmitting power by wire rope the dram as on the minimum.

In transmitting power by wire rope the sheaves should be lined with cork, leather, or wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to increase the "grip" of the wood set on end to set on the grip will will a grip will a

A Wire Rope Half a Foot in Diameter.

A Wire Rope Half a Foot in Diameter.

The Newcastle (Eng.) Olivonicle describes a wire rope half a mile long, 1½ rons in weight and 6½ inobes in oircumference. These are large dimensions for a rope, The Chronicle believes that there are endless chains of greater length than their there are endless chains of greater length than their there are endless chains of greater length than their their their their their their was manufactured at the Low Teams, Casteshett, in South Wales. There I wantgation of 19 wires each in th, the breaking strain of the whole being 175 tons, and that of each wire in the rope 120 tons to the against a train of time to the area in the rope 120 tons to the against one time to the making the rope was two weeks.

weeks.

Old wire ropes which have been used in pitold whire ropes which have been used in pitcollieries as conductors for conveying electricity
to light the mines and works overbead. They
are insulated with tarpaulin and laid in troughs
among coal-dust,

anong coal-dust.

To RE-INK TYPE WRITER RIBBONS.—J.S.D. writes thus in the Scientific American shout type-writer ribbons: Some time ago I tried the avperiment of re-infang a ribbon, whith such authorises that I never expect to buy one again. In the wording of any ordinary writing laid gut a spoonful of thick gun arabic must be fairly and in the special of a special consistency with such a connection of a special confidence of any ordinary writing full gut a spoonful of thick gun arabic must be according to the constitution of a special confidence of any ordinary writing the mixture, and immerse the ribbon long special confidence of a special confidence of the color that it is special confidence of the color constituence of the color constituence of the color constituence of the color confidence of the color color color, bence the color colo

As a fine of such that the fine of such that the finish.

As a finish or covering to walls and ceilings, pulverized steatite is coming into use quite satisfactorily. It is simply scapetone. It is simply scapetone. It is simply scapetone, it is set on a finite point, is pearl gray in the, is said to present the best possible surface for painting, is present the best possible surface for painting, is present the best possible surface for painting, is every claimed for it that it can be washed without in on-absorbent; that it can be washed without change. When subject to heat, moisture and chemical tumes it gives no smell, and it does obe missile can be driven into it without the present of the property of the p

COAL ASHES are of some value as a fertilizer, especially to mix with clayey soil. But the especially to mix with clayey soil. But the patchs, a good covering, over which a little soil is thrown, will soon form a hard, solid let hrown, will soon form a hard, solid let hrown, will soon form a hard, solid sheel the bed, excavating it a few inches below the general surface. Pour on a coating of coal the did, excavating it a few inches below the early could be general surface. Four on a coating of coal the did, repeat with another coat of tar and the send so on, until there are four coats of tar and as many of scheet. This, in a short sime, will harden and make a walk as about show.

ENGINEERING DOTES,

Electric Accumulators.

At the present time much interest is exoited in the solovited world of storage abstracts. When first introduced as a practical apparatus, When first introduced as a practical apparatus, your posts ago, they were hailed as providing to the storage of leokiticity, which was considered a great desideratum. For awhile interior return. The return telest is the they are observed as of selection where de failure in returning the full quantity of electricity with which in the theorem of the following the contract of energy, the dynamic accumulators, the current failure in returning the full quantity of electricity with which accomplises, underged from the cheepest possible source of their form of energy, the dynamic accumulators, the current failure in the charter of the charge itself through the charges, observed the pattern of the charges itself through the charges. The regular cleatron motive force being the clean of the charge itself through the charges. Workege, as the clean of the charge itself through the charges, the charge itself through the charges itself through the charges. The regular electron-motive force being the clean in the clean of the charges in the contract of the charges itself through the charges. The regular electron-motive force being canner, the force of the charges of the charges in the centre of the charges of the charges in the contract. The regular is converted and the charges in the contract of the charges of the charges of the charges of the charges in the contract of the charges in the contract of the charges of the

### Engineering Progress.

All engineers, says a cotemporary, are interseted in the progress being made toward the
obsepaning and amplifying of devices which go
for economy in time, labor and power.
That notable advances are being made is evident to the ongineering student, though made is evitor economy in time, labor and power.
That notable advances are being made is eviaugmentation of story and in
Europe upon devices perteining to ongineering,
and the majority fall to possess commercial
burde upon devices perteining to ongineering,
some that prove of value.
In electricity advances are being made, if the
pressing demand for an electric motor, but if
pressing demand for an electric motor, but if
the production of stand to mention.
The production of stand to meet
and boiler appliances is anyly too numerous
the demands of prudent operators and investpopied.
The production of stand there are many
and boiler appliances is simply too numerous
to mention. (frate-bars, amote-proventers,
to mention. (frate-bars, amote-proventers,
to mention. If he production of stand
and boiler appliances is simply too numerous
and boiler appliances is simply too numerous
the inventor is fully alive to the importhe one time with, and setting more evaponetis must be admitted that these one time with
the production of stating more evaponetis must be admitted that those murderous atit must be admitted that those murderous atthe oral bursed.

Then in the line of safety devices for boilers
the continue his work, that the resolution. But
tiwas or cocurring with their accustomed tretimes of the safety devices for boilers
to more than degratein mass of expericontinue his work, that in the mass of expericontinue his work, that in the mass of expericontinue in work, that in the mass of experiment and investigation, engineering may be the
continue in the laber of the willthe and investigation, engineering may be the
continue in the laber of the willthe and investigation, engineering may be the

Mew Railwar Schemes in Norway,—Although no definite decision has been or is, perhaps, for some little time littely to be arrived
haps, for some little time little you be arrived
Christians, the time is not far distant when the
Christians, the time is not far distant when the
two largest towns in Norway will be connected
to only within the lime. This line will offer very
considerable engineering difficulties, and it is
not y within the last lew years that the scheme
only within the last lew years that the scheme
Its highest plan—the Auriland line—is said to
possess several advantages over its predecessors.
Its highest point is about 3600 feet above the
level of the sea, but this is 180 feet lower than
level of the sea, but this is 180 feet lower than
level of the prior of the Randals scheme.

BRIDGE TRAFFIC.—The probable business of the Poughkeepsie bridge is estimated at an enormous tonnage. The Erie road alone promesor to pass over it 1000 ears a day, including conscering on the east and three on the west, connections on the east and three on the west, seared in 1884 \$1,520,483, with only \$667,-314.58 operating expenses. The St. Joseph bridge, over the Missouri, paid dividends of 20 per cent in 1883. The Omaha bridge yielded an income of \$800,000 in 1883, and its eight per cent bonds have sold as high as 120.

PAPER TYPE.—Type made from paper is the lates to vested by a process has been patenteed by latest novelty. A process has been patenteed by which large type used for princing placette can onto out on wood. The pulp is desiccated and reduced on makened on mixed a bate, after which it is thoroughly mixed with a water-proching it is thoroughly mixed with a water-proching linguid or material—such as paraffine oil or a drying linseed oil, for instance. The mixture drying linseed oil, for instance. Ti portend anon, tri portend anon to an about 1 to the intelligent observer finds on a careful and terest bim when, in the hands of a careful and experienced operators. A gentleman who, for the past five years, has lectured for three months in each years in the city of Boston, has come to

BULLION.—Inyo Independent, June 24: The furnace at Lookout has now been running for some meeks past Mr. Fitzgerald has been taking out been some weeks past Mr. Fitzgerald has been taking out this ore goes a thousand dollars per ton and over, this ore goes a thousand dollars per ton and over, but carries very little lead. Mining men ground creek,

BEVERIDGE,—Keginer, June 23: Lasky's mill at Beverdee closed down on the 13th, after a run on 250 tons of Keynole ote. Mike Lasky has apperintended operations.

STRIKE ON PRUSEINA OF THE COOL IN THE COOL OF THE COOL

The siking out of waker has been temporarily sussibility out of waker has been temporarily sussibility of streinty place.

B. I Dorado.

B. I Dorado.

Junes so: El Dorado county is having a genuire mining boom. Many mines long since known to be occupied of suspiral to devolo them, but within the past year worthy of streinforn have been bying idle for the want of capital to devolo them, but within the past year worthy of streinforn have been bying idle for the want of capital to devolo them, but within the past year worthy of streinforn have been bying idle for the want worthy of streinforn have been bying idle for the year year of capital to devolo them to the leading when the leading worthy of streinforn have been bying idle for the past year of before the work of the leading worthy of streinforn the leading works and a second the lead worth of the leading works. The El Monte, lying store of before the work of development is being warrant the company in etecting a to-stamp mill and first-fire show in the street of the first place of the first place of the first place of the first place in aging worked by the meaning to the street work of development is being pushed to relating works and a to oath the grant of the first place in the street of the first place of the

ADITIONALIA.

SUTTER CREEK.—Cor. Amador Ledger, June 26; The town was set all agog Tuesday evening by the repeture of the Line was set all agog Tuesday evening by the report that S. D. R. Siewart had served notice on the Manowy Co. to discontinue the use of the Line coll and the Manowy Co. to all discontinues the use of the Line the Manowy Co. to all discontinues ago it was thought the manowy Co. Only two weeks ago it was thought settled. It is and as his water upply was indequate, be endeaved and a principle, and a principle, and a principle of the Mahoney mine; so more definite to the discontinue of the thought was indequated, be endeaved to enforce his right to the discontinue as made another payment, which settles the matter beyond doubt. I have to one good authority that mader to company will fin all probability take charge of the property in two or three weeks, and the Valentine and company. Wildman the water has been lowered below the 400-tool two for the company of the contract of the matter has been to the factor too there weeks, and the Valentines has led disconsered, about five feeting a fine to the so and contract of encountering a large percentage of sulphurets. The disconserved alsoovered, about five feeting a fine to the base becauted as the superintendent, says there is one one with the salet has been towning tree gold aurart wery much resembles that of sulphurets. The cities and carrying a large percentage of sulphurets. The cities and carrying a large percentage of sulphurets. The cities of the superintendent, says there is one mouth alsted over the good news. John The taking out of water has been temporarily suspended, as they have conducted to straighten the enough in sight to keep so stamps running steedily suspended, as they have conducted to straighten the enough in sight to keep so stamps running steedily.

### CALIFORNIA.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

MINING BUMMARY.

near future.

BEDROCK TUMUEL.—Cor., Pimmas Mathoration as a future.

BEDROCK TUMUEL.—Cor., Pimmas Mathoration as Co., pimmas station as a conference as of each or suppression of the future growth as the future for the future for the future growth as the future for the future future for the future for future for the future future for the future for the future for the future future for the future future future future for the future for future future future future future future future future future for future

in the river and it will give employment to many.

Plumas.

GOOD CLAIM.—Plumas. National, June 25:

Hungarian bil for several months, and last week he study week light Kelley has been running a bedrock tunnel in Hungarian bil for several months, and last week he serve week he serve week he serve week limited sith in the old claim.

ALCH CLAIM.—The Jones Bros. and W. A. Sperlinited sith in the old claim.

RICH CLAIM.—The Jones Bros. and W. A. Spertweek in the east branch of Nelson creek and the morth branch of the Serve Week he less two nonths they have picked up 480 ounces of nuggets, and that the warmorm of the Nelson of the Yukus, he serve week and the morth branch of the Serve We list in the last two nonths they have picked up 480 ounces of nuggets, and that the warmorm of the Nelson of the Nelson of the Nelson of the Week and the north branch of the Nelson of Ne

Placear.

Working Bear River Tailings.—Cor. Auburn Working Bear River Tailing and some others Republican, lone say. Slass Lings and some others need working the failings in Bear fiver for the pursceed igning the call meast lone may find. Just how they intend to prosed is not known, but we hope the undertaking will seed is not known, but we hope the undertaking will see in or known, but we hope the undertaking will see in the work.

tis expected some rido net will be produced. All blast and a good summer's run is anticipated.

WILL ERECT THE MILL.—Foothtul Tetings, June and a good summer's run is anticipated.

ACT and a good summer's run is anticipated.

ALL ERECT THE MILL.—Foothtul Tetings, June company, at a point to mile sever of Cisco and three ompany, at a point to mile sever of Cisco and three mile states of Fordyce dam. Mr. Carr. St., remainer and a server of the sever of Cisco and three mile states of Fordyce dam. Mr. Carr. St., remainer and sever of the sever of the footh of the sever of th

MAYDEN HILL.—Adin Argus, June 25. All the mines here are yielding considerable ore, the largest quantity being taken from the Golden Eagle and Evening Star mines. Several cleanups have already been made with satisfactory results. Morris Casto and Lon Richbis have again teaced the Junpient mine, and Lon Richbis have again teaced the Junpient mine, it is expected some rich ore will be produced. All the grant future sink a shaft on it, when it is expected some rich ore will be produced. All the last and a good summer's run is anticipated.

New June 25.

Modoc.

ORE.—A good deal of ore is sacked up at Datwin, ut there are not teams enough to haul it to the allored. The ore output of the camp is steadily oreasing and would increase faster if more miners unlike got.

Modoc seen in the county lor a long time.

PROMONTONY.—A kew years ago one of the best builton-producing mines at Darwin was the old builton-producing mines at Darwin was the old Promontory mine. A disagreement among partners til quite recently. A short time ago the property was leased and now ore is being taken out right as are large. Efficien hundred tons of Promontory ore sorted; all the ore in the ledge was taken out light as sorted; all the ore in the ledge was taken out light as sorted; all the ore in the ledge was taken out light as sorted; all the ore in the ledge was taken out light as to can.

The mine is now looking as well as ever, and the best output of former times will be equaled.

Ostwin say that nothing to equal this ore has been in the county for a long time.

BEDROCK THOUREL—COT. Plimas Marche Mars, Jenkins & Marche Mars, Jenk Venture.

The MELJORBIG DISG. A TRIBER, ID SURGER 104 FJOST, 0000, possession to be taken the 1st of next month, oco, possession to be taken the 1st of next month, oco, possession to be taken the 1st of next month, occupant as a size of six between Allining Company has a large amount of machinety on the 1ood. It consists of six between Allining Company has a six of six between the 1st oco-foot level, to which place the very manipulation of the coordinate of the six of

FAST FORK.—Journal, June 25; In the East Fork and the Institution, the Ast Fork and the Institution of I

une capt. James for ins one management of the state of the capt. James for ins one in this place in a cold behavior, and about eight miles from this place in a northwesterly direction. This mine has been northwesterly direction. This mine has been different of the past so years by two gentlemes pay the past so years by two gentlemes pearliants of the past so years by two gentlemes pearliants of the present company will use the abandoned. The property was then nots improved machinery and entitlety new processes. The rock assays from \$65 to \$400 per ton. Sulphores of receiton a milety have processed for rock as a register of the place, and are also opening the mine, ing-hours are found in large quantities. They have in the mine, and the control of the place of receiton a milet foliorination works, board-tonies of receiton a mill, chlorination works, board-tonies of receiton a mill, chlorination works, board-tonies of receiton a mill, chlorination works, board-tonies are found in large quantities. They have in the place of receiton a mill, chlorination works, board-tonies of receiton a mill, chlorination works, board-tonies are then the place of the management of Waboo, and the place of the place of the milet in the milet have been applied to the milet have been a second office, and are also opening the milet beaution of the milet have been applied to the milet have been applied to the milet have been applied to the milet have been a second of the milet have been applied to the milet have been applied to the place of the milet have been applied to the milet have been a supplied to the milet have been and the place of the milet have been and the place of the milet have been and the milet have been and the place of the milet have been and the milet have bee

Trinity.

SIRERA BUTTES.—Mountain Messenger, June 25;

Connection was made in the second upraise between the Mo. So and 9 unnels at the Stores buttes mine, be Mo. S and 9 unnels at the great undertaking boundary last. This work is workly of note in many respects, principally for the great undertaking, cost and management. The last upraise messing, cost and management. The last upraise messing the Mo. 9 tunnel, 500 feet has been driven. The last upraise was yoo feet, and the length of the tunnels at the present point is 8000 feet, which distance has been run by power drills at a cost of between the last unremunerative to the company. Much oredit is 400 coop and \$20,000 and has been almost entirely one and \$20,000 and has been almost entirely due (Spt. James for his sole management of the stain.

Sierra. \$1700, the result of to days run. They have commenced grading, preparatory to putting in a mill of ation work. Miley's mill has not yet commenced open ations. Deforest and Frank Drew were up to the solons. Deforest and Frank Drew were up to the looking splendid. There is a good body of rich ore at depth of 80 feet, and by the aid of a steam pump they are still sinking on the ledge. Twenty feet more in the bowels of the earth, and a drift will be run.

mine.

Ootbomwood District.

Wickel and is kept steadily infining on ore from the mine.

NICKEL AND COBALT.—Reno Gazske, June 27:

Five miners went out to work in the Jacket and Cobait mines at Lovelock last Saturday, and four minbait mines at Lovelock last Saturday, and four miners this morning. The mines at Lovelock market \$700

owners receiving in the San Francisco market \$700

where the ore, whoth is shipped to Swanses, Engisand, for reduction. The English Co. now in charge

gisand, for reduction. The English Co. now in charge

oo the mines is paying Mr. Lovelock, the owner, \$20,

When the mines are placed in good working contition it is claimed that Mr. Lovelock, in control the
nickel and cobalt market of the world.

Lowie District.

Lowie District.

Lowie Districts

the purchasers of the Pitteburg mine in Lewis district are going to build a new mill, in which Huntingtoo crushers, similar to those in the Paradices Valley

Company's mill, will be used instead of stamps.

Peavine District.

Peavine District.

Company's mill, will be used instead of stamps.

Peavine District.

Peavine District.

Peavine District.

Company's mill, will be used instead of stamps.

all will pay without any assorting.

SCORPION,—The east drift on the 300 level is in vein material that carries a good deal of quarts. Although metal-bearing, this quarts is of a low grade.

YELLOW JACKET.—Are extracting and sending to has been opened up ready for extraction.

JUSTICE.—About 500 tons of ore have accumulation of the dump, and the ore-producing sections are looking well.

HAWOOD.—The Thompson mill is regularly engreed and is and is the section of the dump.

LADY WASHINGTON.—The north drift on the 785 level is still in good milling ove. The ove body promises to be several sers of timbers in width, and all will pay without any assorting.

CHOLLAR,—The retimbering of the incline down to the raco level is making fair progress. The west faift from the Chollar old shaft to connect with the Sharon shaft is in quartz showing some stringers of ore.

ANDES.—The drift north from the winze below the s4o level is cutting some very good streaks and bunches of ore. The west crosscut on this level is in vein porphyry earlying some promising feeders of quarts.

#### Washoe District. MEVADA.

ore is much richer than the ore in the main tunnel or the ledge, and is very rich. There is an immense body of ore in sight. On the schange there is also an open cut of about or or the schange there is also an open cut of about or or so feet long and is being the schoult or or ras feet long in gold ore. This mice is owned by Messrs. Smith & Grover. There is an abundance of wood and water on and in the, vicinity of the claim too it has one that you were ynth free willing gold ore. This mice is owned by Messrs, and in the vicinity of the claim for it is exceedingly rich. I maght mention, for instance, but have tested some of the ore from them and find the Kalmpton & Wason; the Brown and find son & Owen; the Lady Belle and Ruby, owned by Messrs. Babb & Mennse; the Cashonale fore are the Mammoth, owned by Messrs. Atchibald, Ralmon & Wason; the Brown mine; the Mammoth, owned by Messrs. Babb & Mennse; the Casique, owned by Messrs. Babb & Mennse; the Casique, owned by Messrs. Babb & Mennse; the Casique, owned by Messrs. Babb & Mennse; the Brown mine; the pave taken in the last few years over \$10,000 owned by Messrs. Babb & Mennse; the Casique, bowned by Messrs. Babb & Mennse; the Casique, the Brown mine; the substance of the Lampon of a fore-sing mill with a work with a two-stamp mill with a work with a two-stamp mill with a work with a two-stamp mill with a work with a few singer. This mine is on the south side of tons in sight. This mine is on the south side of the Pitur, in the Almo mountain, and is so miles of the Pitur, in the Rhum mountain, and is so miles below this place.

Skylark, in Olecon gulch, near the Silver Chain, to Skylark, in Olecon gulch, near the Silver Chain, to Skylark, in Olecon gulch, near the Silver Chain, to Serving the ground absed in the fine strength of the Silver Chain folks are prospected. The Silver Chain folks are prospecting the ground absed in their mine with a district, between the strength of the Silver Chain folks are prospectors are now at work in the hills, and pacer mines in Joshine county. G. R. Caldwell soon be commenced at most of the farge mines a bond state, the state of the countes to the mines in State of the state of the state of the state of the countes of the state of the state of the state of the state of the countes of the state of the state of the countes of the state of the counter of the state of the state of the counter of the state of the state of the counter of the state of the counter of the state of the s

.HATU

shipment, lying at Chloride waiting for teams to checked last week from one of his claims near the parties was unusual activity among the port goes. There was unusual activity among the right-grade gold ore from one of the claims as Music and prospections were the claims as Music and prospections were the claims as Music and prospections were the claim which he is interested. M. C. Amer week. Several important sales have been made under the consummated, which went between 400 and 500 ounces, so we are which went between 400 and 500 ounces, so we are which went between 400 and 500 ounces, so we are well as a day or two since, whither the went to make an examination which went between 400 and 500 ounces, so we are well as a day or two since, which went between 400 and 500 ounces, so we are well as a day or two since, which went between 400 and 500 ounces, so we are well as a day or two since, which went to be seven in the consummated.

Labarce had aix tons of Prince George or put fine the sampling process this moreing. Minetes are complaining at the sampling process this moreing. Minetes are complaining at the sampling process this moreing. Minete the samples of ore clean ore described by the sample of the celear ore. He has started the manual and the samples of ore described by the samples of ore clean ore and the development so it is the scarcity of teams and page. the metal, and assaying from \$20 to \$60 in gold and alver. The walls are smooth and well defined, and alver, The walls are smooth and well defined, that has been placed on the property they have not that has been placed on the property they have not copper, and will also give a good return in gold and copper, and will also give a good return in gold and alver. The operations of the Gray Eagle Company will cause a general rerival of prospecting in Peavine district, and the result will be that the old reamy will come to the front again.

Tueoarone District.

IDAHO, MEW MINERAL REGION,—Georgetown Couvier, June 23, Mr. Heny Mears returned from the head of the Troublesome last week with a number of the Troublesome last week with a number of the Troublesome last week with a number of the Troublesome case leaves between Lost Lake and few miles in extent, and lies between Lost Lake and few miles in extent, and lies between Lost Lake and few miles in extent, and lies between Lost Lake and the will only of Troublesome creek, The veins are large and consist of two distinct kinds—one cartying a convey consist of two distinct kinds—one cartying a convey consist of the saling the pure but more or less mixed with quarts. According the nor of lest in plackeess. The ore is quite pure but more or less mixed with quarts. According to horastone variety of these veins was made by more pure to the resulting to thought over by Mr. Mears consists of losts to the locality, and by enging it quiet he best control of lock to the locality, and by another wither a number of locations. Prospectors are beginning to flock to the locations. Prospectors are beginning to flock to the locations. Prospectors are beginning to flock to the value of the veins. Withing the way of these veins was made by variable, but as the animony mines in Usah had best of the wall to the value of the veins. The or suppreciable that the veins on the Troublesome could be made to pay unless the cartied gold or silver in appreciable quantities.

silver in appreciable quantities, and while willing to buy activations of the Eastward Liber There when the the manner of the properties of Welch, from Baybores, has man percentable quantities, and Welch, from Baybores, has made an extended on their way to examine, at the properties of Welch, from Baybores, has made an expensive the properties and estimation of the Ramshorn and other properties, and the Ramshorn and other properties, and the Ramshorn and other properties, and the Ramshorn and other properties, as a possess of the Ramshorn and other properties, and the Ramshorn and the properties of the Color of the Obdit mine Ras passes from London, and he and Matt. It becked Bast, are now running full blast, and the second as a manner. Mr. C. Lang of Alanne are the color of the Obdit mine Base been struck in the sand the mine of the Opdit mine Base been struck in the Ramshorn, but a series of the Color of the Opdit mine Base been struck in the Color of Alanne and the price of the Opdit mine Base been struck in the Color of the Opdit mine Base been struck in the Color of the Opdit mine grass been struck in the Color of the Opdit mine Base been struck in the Color of the Opdit mine Base been struck in the foreign workings which, when completed a shipment of the price period of the Color of the Colo

Tock very hard.

Wild Rose District.

Wild Rose District.

Wild Rose District.

Wild Rose Districts.

Wild Rose Districts of the conditions and delivered to the conditions.

Wild Rose on the conditions and delivered to the mill—Paradise mine, 113.560 pounds, Wild Goose where says walve sassy value, por ton, 200 outces silver; o.11 ounces gold. Mill run 183% hours and recentrates produced 420 seckes, 31.285 pounds, par centrates produced 420 seckes, 31.285 pounds, par Thiumph one of millings. Conditions of the conditions which gives low assays. The ferencian of the conditions which we seek. In the count drift, to two or in the upraise from which we are ob a ball to two or in the upraise from which we are one and a ball to two or in the upraise from which we are getting enough. The ferencian circlescoins will the ore is decreasing in quantity and will soon be exhausted.

Will soon be exhausted.

COMMONWEALTH.—Lumber and timbers for the shaft to the depth of 300 feet have been ordered, and are arriving as fast as required.

BELLE ISLE.—Vinner-Krotew, June 20: Line rockwery hard.

Wild Bosse District.

PARAPISE VALLEY MINING CO.—Stiency State.

Cuch, same revel.

DIAMA.—Repairs and improvements in and about the work nave been completed, and work underground has been resumed. A crossout has been resumed. A crossout has been started west from the shaft on the so-fool level.

GRAND PRIZE.—Work in the shaft is finished.

The soo level is being cleared as fast as possible, caved ground caught up, new timbers put in and mew track being glad,

Mevada Dietatora Dietatora Dietatora Dietatora Dietatora Dietatora Mevada Mevada Mevada Mevada Mevada Mevada Mera, which will be put in as 5000 telvel is ready for unbers, which will be put in as 1000 mes as the guides free guides for the cage are between a base, and all will be complete and ready overhead on the solid message and be selected and put in order, guides for the cage are become to start on the solid. Starts has started an upraise from 1000 message and all will be complete and read to partnern of the shaft to drain off the water preparation to the shaft to drain off the water preparations to the shaft to drain off the water preparations to the shaft to drain off the water preparations to the shaft to drain off the water preparations to the shaft to drain off the water preparations to the shaft to shaft to shaft and so ne the constituting the shaft. Have resumed work in 150-1601 level, has been extended to feet, and work discontinued for the present. Have started a crosscut west from the east vein between Mos, a and 3 crosscuts, as me level.

JANAAJO.—Worth drift from No. 3 crosscut some level. 350-601 level, has been extended to feet, and work discontinued for the present. Have started a crosscut west, from the east vein between Nos. a and 3 crosscuts, as me level.

JANAAJO.—Morth drift proproces and 3 crosscut west, has me level.

JANAAJO.—Worth drift from No. 3 and 3 crosscut.

JANAAJO.—Morth drift from No. 3 and 3 crosscut.

JANAAJO.—Morth drift from No. 3 and 4 should the works have been completed, and work about the works have been completed. Band work about the works have been completed contraction of the present completed. The works have been completed contraction of the present contraction of the pre

Additional properties of the p

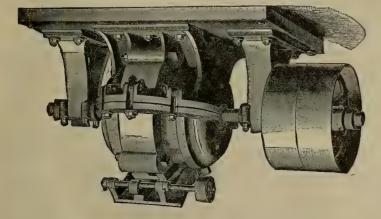
ORGAN, TONES.—Rio Grende, Républican, June 20: E. G., Shield is now year of the paper than the concentration of the concentry of the contration of the contratio

MINING AND SCIENTIFIC PRESS.

JULY 2, 1887.]

NEM YORK,

## FRISBEE-LUCOP



## CENTRIFUGAL ROLLER

FOR WET OR DRY-

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of amalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh

At 300 revolutions per minute wet.

All wearing parts easily and obeaply replaced. May be seen in operation at the New York Metallurgical Works, 104 and 106 Weshington St., and Pacific Iron Works, 104 and 106 Weshington St., and any information required, farnished on Certificates as to performance of the Mills, and any information required, farnished on application.

THE FRISBEE-LUCOP MILL CO.,

HOOKER & LAWRENCE, Gen'l Agents. Office, 145 Broadway, cor. Liberty St.,

LIFE-SAVING RESPIRATOR

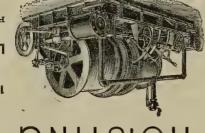
and Salivation. Entirely Prevents Lead Poisoning

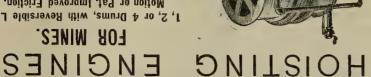
The most perfect appliance for people engaged in meisting, Dry Cuenting, Guano Workel, ulckeilver Mines, Lead Corroding, Threshvig and Stock-criving, and all other cocupations pere there is dust, poisonns vapor, or bad odor. In Feeding Threshving Machines, and similar in by, they are indespensable, as no torelyn substances in being respectively when they we worn, in by inhaled when they are worn.

work, they are indispensable, as no toreign attoractions on points of the first of

JOHN TAYLOR & CO., Sole Agents, 114 to 118 Fine St, San Francisco.

LENBERGER'S ROLLER ORE CRUSHER, send for Descriptive Circulars containing Testi-ls of well-krown parties who are at present using





1, 2, or 4 Drums, with Reversible Link Motion or Pat. Improved Friction.

**LOB WINES** 

WM. QUTENBERGER. Sacramento Foundry, Oor. N and Front Sta. SACRANEUTO, CAL.

Very little friction. Bests other mac inces in reducing and confirmating over, and costs less, All who have used this mill commend it highly. Splendid for low-grade ore on account of woost of working. More or less weight on Crusl ers as desired, Power applied direct, Works Ore at Low It is a full fledged Quartz Mill without gearings, WEIGHT, 4 TONS. Portable and Dura Crush 8 to 10 Tons per Day.

LIBGERWOOD M'F'G COMPANY,

96 Liberty St., New York.

SAN FRANCISCO, PACIFIC COAST AGENTS,

PARKE, LACY & CO.

Cor, Fremont and Mission Sts.,

nem haven manuf'g co.'s ma-MACHINERY, WOODWORKING

J. A. Pay & CO.'S Woodworking

MACHINERY

**CRECORY** 

ENGINES. BROS' HOISTING

San Francisco, Cal.

ATLAS FUGINE WORKS ENGINES

SOUTAL ENGINES, AND HORI-

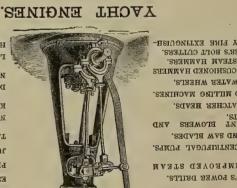
EMPIRE LAUNDRY MACHINERY, OLLO SIFENT GAS ENGINES,

првои еисиие солевнова.

KOKLING INTECLOKS VND ETEC-TOKS,

TYME VAD BODIEK SYM MILTS NEW YORK BELTING AND PACK-DISSLOWS CIRCULAR SAWS.

H. W. JOHNS' ASBESTOS PACK-





**ENCINE**2 <sup>guq</sup> BOIF

SUPPLIES AND LUBRICATING

FROM 2 TO 100 H. P., ALWAYS IN STOCK

BROCK'S PATENT DROP FORGED CHAIN PIPE WRENCH



Each number will fix range of sixes equal to six or leaves are herdened to a saw temper, and can be sharp equal unmber of any kind.

All pers are interchangeable, and can be readily chain will not united while in use, but can be instantly change.

I peleased.

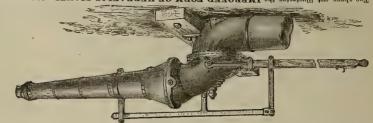
danufacturers of Every Description of Iron and Steel Drop Forgings, H. WILLIAMS

31 RICHARDS ST. (Near Hamilton Ferry),

BEOOKLYN, N. Y.

MACHINE, HYDRAULIC

CIANTS. HYDRAULIC **0**E **FORM** 



bove cut illustrates the IMPROVED FORM OF HYDRAULIC GIANTS, which we must similar styles are intringements upon this form, and a judgment stands of record to that effect, us on of ludge Sawyer of the U.S. Greule Court in the matter of Hendy and Fisher vs. R. Hoskin et als.

JOSHUA HENDY MACHINE WORKS,

39 to 61 Fremont St., San Francisco, Oal.

## Metallurgy and Ores.

### 416 Montgomery St., San Francisco. SMELTING and LEAD CO., SELBY

And Assay Office. COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, .... MANUPAOTURARA OF....

SHEET LEAD, LEAD PIPE,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

Under Chamberlin Patent.

## JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

CHEMICAL APPARATUS AND CHEMICALS, ETC CHEMICAL APPARATUS AND CHEMICALS,

maparies, Milling Companies, Frospectors stock of Eslances, Furnaces, Muffles, iffers, etc., including, also, a full sto 114-118 Pine Street, - San Francisco, We would call the attention of Assayers, Chemists.

(R) Our Gold and Suver sees of finoness, and vanuers ables for computerfor of seavys in grains and grammes, a bits for computerfor of seavys in grains for grammes, and the parameter for computerfor of short free to an analysis of this well-known manufacturer are thoroughly elable, and full weight of Silver guaranteed. Orders are as a special season of the season o

## Nevada Metallurgical Works,

NO. 23 STEVENSON STREET,

DelqmaS as TO Ores worked by any Process.

Assaying in all its Branches. Analyses of Ores, Minerals, Waters, etc. Working Tests (practical) Made.

Special attention paid to Examinations of Plans and Specifications furnished for most suitable Process for Working Ores.

C. A. LUCKHARDT & CO. Mines; Plans and Reports furnished.

Mining Engineers and Metallurgists.

METALLURGICAL WORKS

318 Pine St. (Basement.,

Corner of Leidesdorff Street, - . SAN FRANCISCO

raying and Analysis of Ores, Minerals and Waters, and Salarying and Machanita on the corresponding of the property of the corresponding of the corresponding

G. KUSTEL & CO., Mining Engineers and Metallurgist

MINCHEZLER HONZE

44 Third Street, San Francisco, Cal.

This Five-proof Brick Building is centrally located, in
the Breathiest part of the city, only a half block from
the Grand and Palace Hotels, and close to all Steamboat
and Railread Offices.

Laundry Free for the use of Families.
THE STREE STREE

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE.

Practical Treatise on Hydraulic Mining. Bractical Treatise on Hydraulic Mining.

This new and important book is on the use or thought of process frame, somes, Finnes, Fames, Pares, Pares and the property of the process, history and development of mines, a large and development of mines, a large and process, the process and process.

QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE TO

11GS and TROMMELS. COBNISH BOFFS'

ENCINES AND BOILERS. FRASER & CHALMERS

This Mill as a Crusher and Pul-vertizer is without rival, to peretion in lead-

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

HOISTING

ENCINEZ'

HYPIDIES

MIKE ROPE

TRAMWAYS.

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

MEXICO OFFICE: No. 11 Oslie de Justez, Obihushus, Mexico.

GENERAL OFFICE AND WORES: Fulton and Union Streets, Chicago, III.

'SAWDA'

WACHINERY,

CORNIZE

**ENCINES** 

**bumping** 

UTAH OFFICE-SALT LAKE OITY, UTAH. NEW YORK OFFICE:

ROOM 48, No. 2 Wall Street,

COLD MINERS

Quartz, Gravel and Placer Mines!

## **ONITAMADJAMA**

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

653 and 655 MISSION ST., SAN FRANCISCO, CAL.
E. G. DEUNISTON, Proprietor.

SEND FOR CIRCULAR,

MOTICE.—My Sliver-Plated Plates are well known and used everywhere. They have proved superior to all others in durability

## LeedW reteW enidruT ZniniM JAMES LEFFEL'S

These Wheels are designed for all purposes where limited quantities of water and high beads are designed for an one round on the state of the state

Springfield, Ohio, JAMES LEFFEL & CO.,

or 110 Liberty St., Mew York

FRASER & CHALMERS, General Agents, Ohicago, Ill., and Denver, Col

PARKE & LACY, General Agents, San Francisco, Cal.

CHEMICAL LABORATORY, THOMAS PRICE'S ASSAY OFFICE

RULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

industrial Publishers, Booksellers, and Ores Received on Consignment, Sampled, Assayed, and Disposed importers, Importers, tan, v. s. v. of in the Open Market to the Highest Bidder.

MINERALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

ASSAYERS, CHEMISTS, ETC.

We have just compiled a very complete Liet of Recent distanced Works on the above subjects, which we distanced Works on the ebove subjects, which we have the by mall, postage paid, to any diston the very constraint of the subject of Books on Electro-Metallurgy, also a Work Leading, the William Schulung, textern-Making and Metal Working, liding; Founding, textern-Making and Metal Working, liding; Founding, textern-Making and Metal Working, liding; Founding, the conting to the conting to the world who will furnish his address, one is any one is any to it to the world who will furnish his address.

HENEL CARET BAIRD & CO.,

## A RARE INVESTMENT.

Or milliure McUerg of FIREGE (B. MIIIII) on the cococchy completed portion of the Cococchy cocchy cococchy cocchy cocchy cocchy cococchy cocchy cococchy co Two Hundred Acres of Placer Mining

## The Techno-Chemical Receipt Book

NOW READY.

THE TECHNO-CHEMICAL RECEIPT BOOK—COM—OND—COM—OND—COM—OND—COM—one most impropriate, and most bread blecoepts, overing in Chemics and Pendrolarly, and their Edited chieft of the Chemics of THE TECHNO-CHEMICAL RECEIPT BOOK

HENRY CARRY BAIRD & CO., Industrial Publishers, Booksellers, and Importers, 810 Walnut St., Philadelphis, Ps., U. S. A.

## **OZL IZZOEDI**

Catalogue No.5, Jan I, 1887. AND MAILED FREE ON APPLICATION,

צסכא בצוררצ' AIR COMPRESSORS, CLAYTON

For CATALOGUES, ESTIMATES, Etc., Addres And General Mining Machinery.

Clayton Air Compressor Works, Office, 43 DEY ST., NEW YORK

## ELECTRIC SYSTEM THE RAE

DIVIDEND NOTICE,

## The German Savings and Loan Society.

For the half year ending June 30, 1837, the Board of Directors of the German Savings and Loan Society has declared a dividend at the rate of four and thirty-two one-bundredths (4 32.100) per cent per and thirty-two per cent per annum on evidenty deposits, pay able on and after the fore and every an evidenty deposits, pay and on and after the foreign of July, 1837. By order.

DIAIDEND NOLICE

San Francisco Savings Union,

For the half year ending with June 30, 1887, a divi-dend has been declared as the rate of tour and thirty. Ewo one hundredths (4 32-100) per cent per annum on term deposits, and three and six-tenths (3 5-10) per cent per annum on ordinary deposits, free of taxes, payable on and attern and three and six-tenths (3 5-10) per cent per and the contract of the contract of the contract of the LOVELL WHITE, Cashier and the contract of the contract o

Established 1856.

Constantly on band a full assortment of Manila Kope,
Sisa Rope, Tarred Manila Rope, Hay Roop, Whal
Line, etc., etc.
Extra sixes and lengths made to order on short notice
THIRS & CO. San Francisco Cordage Factory.

MAN TUBES & CO.

If you want a good pair of Gloves, ask your merchant for our brand,

LEAK GLOVE MANUFACTURING CO.,

MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

On Tokinorals & Vortaon.

On California & Va M. (\*\*)

On California & Va M. (\*\*)

On California & Va M. (\*\*)

On California & Wester & Wes LATEST DIVIDENDS—WITHIN THREE MONTHS. MEETINGS TO BE HELD.
OPPOSED BY B. F. NAME OF COMPANY. Arizona...
Nevada...
Nevada...
Nevada...
Nevada...
Mevada...
Mevada...
Mevada...
Mevada...
Mevada...
Mevada...
Mevada...

S. F. Stock Exchange. ni sels teadzin and teewod to elds?

WEEK WEEK TUDING TO 30.		END	МЕЕК МЕЕК		WEEK Ending June 9.		MAME OF COMPANY.	
02.2 0 02.2 0 04.1 6	3.5	3,25 2,25 3,25	00.8 07.1 81.1	09.8	01.8		3,70 2,30 1,60 1,60	AlphaatfA
62.7 8	7.d	09.₽	4.35	06*#	09'∌	62.6	£4.	Belcher Brophy
ιε, a 0	0,5	7.00 2.10 1.05	68,1 67,	0₽°8	61,2 66,	2,70 2,70 1,20	2,20 1,10	Best & Belcher Baltimore
00,4	0.4	1.05 1.25 2.10	09, 21,2 01,1	87.3	66,	3°00	01.1 09.2 86.1	Belle Isle Bodie Con Benton.
35.1 :	•••	00.I	06	1.25	ăi,i	1.25		Bodie Tunnel Bulwer Con, Vs. & Oal
07.2 0		12.60	OF'T	23		Z 00 ₹	\$12	Oballenge
87.7	2g	09.2	00.7	67.7	57. L	00.8	22.7	ОродажОродоруствой
ųγ. č	9.	00.2 00.	09.I	67.	99.	08,2 38,	68.2	Con, Imperial Caledonia Con, Pacific
00°T 0		06 74	68.	00.8	08° 84	8.25 1.25	22.7 90,	Orocker
			03,	52.	****	08°T	08.	Central Dudley East B. & B
OG'T G	C.1	1.30 2.00	1.20	09'1	1.35	68.25 38.1	09°T	Exchequer
06,8 0	0.8	3.80 3.80	35.8 34.8 36.8	94"1	3.90 1.60	79 29 199*T	03.1 €.60 §3	Grand PrizeGould & Curry
00,2 .			****		****	94°	• • • •	Holmes
08, 0	2.1	04	03.	67.1 07.	g9°	86.I	08. 67.1	
07.1 3	g'1	01.10	02,I	06"		01.2 02.1	06	Kentuck Kentuck
\$ 5.50		02.S	ài.s	38.S	37.2	00.8	08,2	Martin White
• • • •	• • •	09.₽	00'7		****	07.9	<b>#</b> g	Mexican Mt. Diablo Northern Belle
01 I G	2 i	0₽.I	01.1	08.1	1.25	1.65	1.35	OLEVEN

Sales at San Francisco Stock Exchange.

Xellow Jacket5å@54		50 Eureka Con υδ
Utah 1, 180		100 Exchequer1.40
Union Con 3.20		350 Con. Imperial 2.15
US \$ 4 20		200 Caledonia65@70cl
Savage		150 Central 65c
	220	200 Crocker90c
Silver Hill45c		100 Crown Point525
Peerless Szeltes T		
P. Sheridan105	COI	50. Chollar78
Potosi	OZT	16.0 Вептор полива 001
05.2пвитьуО		100 Baltimore95c
\$8tidqO		100 Belle Isle6.25
Мет. Queen4.45		225 Belcher73@73
M ono.	04	100 Eullion 2.00
Mexican4.15	205	100 B. & Belcher64
Lady Wash 80c		09.8
Julia75c		200 Atlantic70c
Justice55		250 Andes 1.35
		200 Alta, 2.05@2.10
Gould & Curry 3 20	002	THURSDAY June 30, 1887.

Don't Fail to Write.

ould this paper be received by any subscriber whic content is of velocity of the content of the

A GLOVE.—There is probably no line of goods that requires more care in manufacturing than gloves. The is owning to the large number of pieces which must be accurately adjusted in order to make which must be accurately adjusted in order to make too of the Leak Glove. A visit to and an inspection of the Leak Glove Manufacturing Co.'s seasblishment is all that is necessary to convince one that it hey are fixed to do just what they profess to be doing—making the best gloves in the world.

THE Homestake paid its one hundred and seventh dividend on the 25th. The amount was \$25 000, making \$150,000 this year, and \$3,848,450 to date.

We quote shipments since our last, and shall be labeased to receive further reports:

Mount Diablo, June 22, \$6494, 737; Moulton, 24, \$14,816; \$16,206; Muelbird, 24, \$19,206; Muelbird, 24, \$19,206; Muelbird, 24, \$10,206; Muelbird, 24, \$10,206; Marget Ann, 25, \$4676; Manulton, 26, \$20,206; Hanauer, 23, \$6350; Germanis, 26, \$20,206; Hanauer, 23, \$6350; Germanis, 26, \$20,206; Hanauer, 23, \$6350; Germanis, 26, \$20,206; Hanauer, 23, \$20,206; \$20

Bullion Shipments.

Soft, No. 1, ton

(Weolksale: June 30, 1887; Thursday, June 30, 1887; Kar., 1887;

San Francisco Metal Market,

Santa Barbara Water, Land and Cinnabar Co., June 27. Location. Santa Bathara Co. Cap-ials stock, & Location Directors, D. H., Jones, S. W. Miller, E. J. Ryan, S. P. Piatt and M. H. Gil-

CALAVERAS, STANISLAUS AND SAN JOAQUIN IR.
RIGATION CO., June 25. Object, to acquire water
rights and to divert the waters of the Shanislaus
river and other streams for irrigating and manufact
ners, S.F. Capital stock, \$500,000. Directors, M.
F. Tappey, John N. Woods, fohn Gambetta, W.
E. Gibbons and John D. McDougsid.
E. Gibbons and John D. McDougsid.
SANTA BARBARA WATER, LAND AND CHARLAS

AVERAS BLUE GRAVEL M. Co., June 25. or, California. Capital stock, 5t., Oo0,000. ors. Domes Buckley, Jos. L. Wilson, John 37. David Paine and Butlet Burris.

EAGLE G. M. Co., June 25. Location, Califor-nia. Capital stock, \$10,000,000, Directors, L. B. Harris, H. G. Bausman, Geo. C. Guiden and Max Blaskower.

The following companies have been incorporated, and papers flied in the office of the Superior Court Department to, San Francisco:

Grav Eraele M. Co., June 25. Location, Vashoe, Vav., Capital stock, 510,000, Directors, A. H. Hertman, W. F. Mills, J. R. Hertman, C. Diotley, J. F. Chapman, W. J. Adams and S. E. Wallace.

Exclus 6. M. Co., June 25. Location, Califor-

New Incorporations.

M. I., Prinz-A Pool.—Fresno Co. M. S., Prinz-A lameda Co. R. G. Husrow.—Butle, Montana, E. F. Sarrat-Murboldt Co. E. P. Sarrat-Murboldt Co. E. P. Sarrat-Murboldt Co. E. P. Barrat Co. B. M. Hamirrov.—San Mateo and Santa Cruz Cos. H. M. Hamirrov.—San Mateo and Santa Cruz Cos.

#### Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subgreed to examine its contents, terms of such give it their own patronage, and just the their own patronage, and give it their or presents, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

Inventors. List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Floneer Patent Solicitors for Pacific States.

From the official report of U. S. Patents in Daway & Co. 's Patent Office Library, 252 Market St., S. F.

FOR WEEK ENDING JUNE 21, 1887.

365,176.—Pipe Mold—W. A. Frick, Los An-365, 168.—Gřip Keleraski.

17. Cooney, S. F.

26. Joseph J. Parecketing Scale-Beam Latches
E. O. Deming, S. F.
265, 333. — Button-Hole Cutter—C. Dickenm., Porligad, Ogn.
365, 055. —Snow Plow—A. E. Dietz, Oakland,
365, 055. —Snow Plow—A. F. Dietz, Oakland,

365.836.—Sterreoscope—G. D. Horlon, Snoho-365.342.— Smoke-Consumer—J. W. Hubber, S. F. getes, Cal. 955,128.— Firge Ladder, T, Hayes, East Oakland, Cal. 355,181.—Тваммег-А. Heiron, San Leandro,

Nors.—Copies of U. S. and Foreign packarts turnlahed by Dway & Co., in the shortest time possible Op packarts and foreign patents of telegraphic order). American and foreign patents obtained for facility of each packart packart patent between twenty, at veasonable inventors transacted with period security, at veasonable rates, and in the shortest possible time.

#### Notices of Recent Patents.

Foreign Patent Agency, the following are Among the patents recently obtained through Dewey & Co.'s Scientific Press U. S. and

VEHICLE AXLE. THE ST, 1887. This improve: 365,144. Dated June SI, 1887. This improvement in redicte axise consists in the employmental removable shoulder or collar which receives the wear and may be replaced at simple expense when too much worn for further use. The standard of the stan Worthy of special mention:

Vehicle Axle. - Wm. F. McMutt, S. F. No.

placed at simple expense when too much worm for turther use.

To Expense we have too much worm for turther use.

365,140. Dated June 21, 1887. This invention of excavating the dead of the construction of excavating blades or flags and it consists mainly in a movel construction of excavating blades or flags extracted and it consists mainly in a movel construction of excavating blades or flags extracted in the construction of excavating blades or flags extracted in the construction of excavating blades or makes at the excavation of excavating the control of the support of the support of the control of the inventor dated October of the control of control of the control of the inventor dated October of the control of control of the control of the inventor dated October of the control of control of the control of the inventor the inventor has and also of an improve density the control of the control of control of control of the control of control of control of the control of control of

Aw-Level And Ser-Gaor.—dobn Beaulieu, Acesta, Humboldt county, assignor of one-hall to John Harpst. No. 365,163. Dated June to John Harpst. No. 365,163. Dated June 21, 1887. This is a tool which is appearing to the teeth of cross-one as page by which the cut saws, and to serve as a gage by which the sud of a bat having a plane surface to rest upon the points of the teeth, by the sid of which pupor the side of this bar a plate points of the teeth, by the side of this bar a plate points of the teeth, by the side of the see and are plate are leveled. From one side of this bar a plate side of the tey of the teeth points of the level see and the side of the saw-blade while the adjustable screw passes the saw-blade while the adjustable screw passes the saw-blade while the adjustable screw passes the say of the teeth.

#### Mining Share Market.

Mining stock circles are very quiet, the volume of business being quite moderate. Fluctuations in prices have been slight. Up on the Constactors good made and in due time the thunder of their stamps will be ground for a new 10-stanp mill adjoining their works, and by August 15th they will be working their own ores as they ste boisted from the mine.

SAN FRANCISCO.

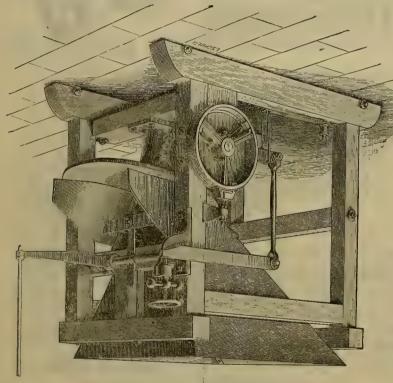
NEW YORK, No. 25 Bond St.

H. M. RAYNOR,



10SHOV HENDY MACHINE WORKS,

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



"OHALLENGE" IMPROVED ORE FEEDER.

The est form of Feeder ever devised, and pronounced by reputable mining men to be far superior to any form of "Roller" Feeder manufactured. We refer to the follow-ing gentlemen who have furnished us with restimonial letters to the

N. W. Crocker, Supt. Bunker Hill Gold Min. D. C. Wickham, Taylor Mine, Greenwood, Cal. ing Co., Amedor City, Cal. ing Co., Amedor City, Cal. W. G. Roberts, Greenwood, El Dorado Co., Cal. ing Co., Amador City, Cal. M. Takenwood, El Dorado Co., Cal. ing Co., Amador City, Cal. shove effect, which can be seen at our office, viz.:

"CHALLENGE," "STANFORD," "TULLOCK," or "ROLLER" FEEDERS,

And will furnish descriptive Catalogues and copies of Testimonial Letters, and will

CALIFORNIA VIGORIT POWDER quote prices upon application,

No. 40 California Street, San Francisco,

**NILHO-CI-XCEHINE** 

Blasting Powders. ("TNAME" of "GIANY")

FOR REMOVING STUMPS AND TREES, vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal.

ED. G. LUKENS, Manager.



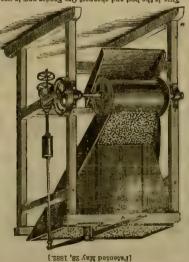
For Sale at Half Price,

ORE CONCENTRATOR And no rotately, a Mew Kapid

(Metcalf's patent).

Asteria, N. Y., Long Island. Address J. H. TIBBITS,

THE ROLLER ORE FEEDER



Golden State and Miners' Iron Works. GAW MILLS AND MACHINERY

San Francisco, Ca 257 First Street, Sole Manufacturers,

THE RUSSELL PROCESS COMP'Y,

C. A. STETEFELDT, President.

NEW YORK OFFICE, 18 BROADWAY

WANTED-AN ASSAY OUTFIT.

nplete inventory, stating price.

OHAS. M. OLARK & CO.,
tench Brokers, Prescott, Arlzons

IBON T. G. CANTRELL,

andacturing Purposes.

Laboratory

Saws

CIRCULAR CHISEL BIT

inserted Tooth

SPAULDING'S

N. W. Corner Main and Howard Sts., San Francisco,

and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES. CASTINGS AND FORGINGS Description

IMPROVED PORTABLE HOISTING ENGINES,

NATIONAL ROCKER QUARTZ MILL

CAPACITY, 12 Tons in 24 Hours, 3 H, P, KENDALL'S PATENT, AUGUST 24, 1886.

MARSHUTZ & CANTRELL, Sole Manufacturers.

restructed the section of a first of the control of section of the control of the

to Hed-one ends seed is 1800 seff. I, To Osel at 1800 seff. I, To Carlo and seed is 1800 seff. I, To Carlo and seed and seed seed seed to the company of the

We challenge comp

GENERAL AGENTS, SAN FRANCISCO, CAL.

Send for Circulars and Price List

FOR KAILMOADS AND LAND CLERKING, 1s from three to four ting past its prowder, and is used by all the Eshivoads and Oravel Claims, as, it breaks mo save time and money. It is as dry as the ordinary Blasking Fowder and rums as I have time and when the contract of the contract and the same and man as I was a contract of the contract of

THE GIANT POWDER COMPANY

MARSHUTZ & CANTRELL.

The Safest and Strongest High Explosives in the Market.

JUDSON POWDER IMPROVED.

GELATIME-DYNAMITE, Stronger than Dynamite and even Saist in Handling.

CIVAL BOADER OF DYNAMITE

RVNDWVNN' NIETSEN & CO'

OESICE CERRE

SAW COMPANY N. W. SPAULDING

MACHINIST.

MINING BORBNING.

WINING WEN

strong company about to begin extensive work near

## fron and Machine Works.

CALIFORNIA MACHINE WORKS, Wo. 119 Beale St., - San Francisco.

Brodle Rock Orushers, Hydraulle, Steam Power, Hydraulle, Sdeam Power, Hydraulle, Sdeam Power Hydraulle, Sdeam Power Hydraule, Sdeam Hydraule, Steam Engines, Flour Mill, and Machines Machines Machines

Manulacturers of E. E. Henrickson's Patent Automatic islety Catches for Elevators. All kinds of machinery and capitred. ELEVATORS.

#### SACRAMENTO, OAL. DNION IBON MOEKS'

ROOT, NEILSON & CO.,

Engines, Boilers, Steam

Flouring Mills, Saw Mills and Quertz Mills Machinery constructed, fifted up and repaired. Front St., bet, N & O Sts., Sacramento, Oal. MACHINERY FOR MINING PURPOSES.

## HALL'S BOILER WORKS

J. V. HALLI, 304 and 306 Beale St., San Francisco, Cal. -вемолер до-

Marine, Stationary & Portable Boilers. PRACTICAL BOILER MAKER

Smoke Stacks, Hydraulic Pipe, Oil or Water Tanke, Ore and Weber Burkeis, Gasconcieve, Givlers, Bridge and from Ship Building. All kinds of Sheet from Work. Re-pairing promptly attended to at lowest possible terms.

### Golden State & Miners Iron Works.

Maculacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

SLEAFINGON'S PATENT

Mold-Board AMALGAMATORS,

Golden State Pressure Blowers.

First St., between Howard & Folsom, Fts.

THOMPSON BROTHERS,

ENGEKA FOUNDRY

29 and 131 Beale St., between Mission and Howard, S. I

MANUFEES OF GENERAL MACHINERY.
Works, No. 315 Mission 84., San Francisco.
Special afternion given to Woodworking Machinery.
Steam and Gas Engines. Correspondence solicited.

MINING FUGINEERS

Civil and Mining Engineer, W. A. GOODYEAR,

Address " Business Box A," office of this paper, San MINING EXPERT AND GEOLOGIST.

EOSZ E BEOMNE'

Mining and Hydraulic Engineer,

NO. 307 SANSOME ST., SAN FRANCISCO.

American Exchange Hotel,

per & \$1.50 Coach. me St., Se 1.25 Eree San Francisco, om Bank of Cal. \$1,

CHAS. & WM. MONTGOMERY, Prop'rs. The above Hotel is situated in the midst of the Bank g and Commercial Houses of the city, and is by is: the st home-like and desirable Hotel to stop at.

Engraving superior Wood and Metal Engraving, Belectrotyping and Stereotyping done at the office of this paper.

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL.

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphare and Sulphur Company's Products. General Insurance Agents.

Have correspondents in all the object of the United States, Encope, Australia, India, Obina and the principal latends of the Feeding. Purchase goods and sell California products in these countries.

Particular of the Pacific Case of Insurance Assumed the Principal Assumed for the Pacific Case of Insurance and sell California Pour Assumed Feeding. On. of Insurance General Agents for the Pacific Case of Insurance and States.

General Agents for the Pacific Coast of NATIONAL ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of London; BOYLSTON INSURANCE CO., of London; BOYLSTON INSURANCE CO., of London;

Gro. W. Раквсотт, President. Івуние М. Scort, Gen'l Manager. H. T. Scort, Vice-Pres't and Treas.

Location of Works, Potrero. P. O. Box 2128.

Office, 216 Market St., S. F.

Agents of the Cameron Steam Pump. STEAM. AIR. AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

Етовтз, Ето., Ето. ROCK BREAKERS, Stants, Pans, Settlers, Вавт Ноізта, Увитігалис Раиз,

Tustin's Pulverizer

Mill Machinery, Saw Mill Engines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Wheels.

MILL MACHINERY.—Batteries for Dry or Wet Crushing, Amalgameting Pane, Settl rs, Furnaces, Retors, Concentrators, Ore Freders, Rock Breakers, Furnaces for Reducing Ores, Water Jackets, etc.

Worke, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

MINING MACHINERY,—Hoisting Engines and

MARINE ENGINES AND BOILERS. -NAMEROTORERS OF-

San Francisco.

MISCELLANEOUS MACHINERY.-Flour

VERTIOAL ENGINES, HORIZONTAL ENGINES, AUTOMATIC CUT-OFF ENGINES, SUAPPURE,

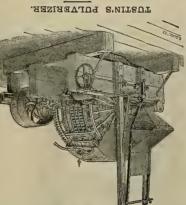
**NAION IBON MOBKS** TRY OUR MAKE, CHEAPEST AND BEST IN USE.

Successors to PRESCOTT, SCOTT & CO.

HINCKLEY, SPIERS & HAYES, Proprietors.

Propeller Engines, either Hi Stern or Side-wheel Engines,

Office, 220 Fremont St.,



ENGINESBOILERS WORKS ORE WET OR DRY.

Either for use on Steamboats or for use on Land. OF ALL KINDS,

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGENTS FOR THE PACIFIC COAST FOR THE

Corlies Engines and Tustin Ore Pulverizers. SPECIALTIES Deane Steam Pump, Special Pump

PACIFIC ROLLING MILL CO.,

Cast Steel Castings and Steel Forgings

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Cast or Wrought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR HOMOGENEOUS STEEL,

SOFT and DUCTILE

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from § to 3 inch dismeter and Flats from I to 8 inch. Angles, Tess, Channels and other spapes steel Wagon, Burgy, and Truch Thes, Ploy Steel; Machinery and Special Shape Steel to size and lengths. Parties in committee the founds per year. ALSO, Hallvoad and Merche Stone is ship and Boat Spikes; Steambe, and T iron, Bridge and Machine Bolts, Lag Scrows, Muts, Washers; Ship and Boat Spikes; Steamboat Sharks, Granks; Granks, Commes, Commoding Rods, etc. Car and Docomotive Axles and Frames, and Index and Steamboat States, Car and States, Car and States, Car and States, Car and Steamboat States, Car and States, Car and States, Car and States, States, Car and States, States, Car and States, States, Car and States, C

ear Orders will have p

B) GOTTEGE COLLEGE, EM SHIP, MISING, and WATER TANKS a Specialty. E.A.

FULDA BROS., Proprietore,

CALIFORNIA WINE COOPERAGE CO.

WATER TANKS, WINE TANKS!

PELTON'S WATER WHEEL,

For Sale by all druggists

THE H. H. H. Over the control of the

H.H.H. FE HORSE LINIMENT

8 California St., and 21 Fremont St.

PARKE & LACY

вервевантар ву

For Catalogues, Estimates, Etc. address: THIRD EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIONS

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

ni betaeretni aredto bns ENGINEERS, CONTRACTORS,

WINING WEN

NOTICE TO

INCERSOLL ROCK DRILL CO.

TIN IWENT

SO to 40 Spear St.,

The Late of



(\$2\\\2'\) O' \(\O\) FINE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The wear and serely nominal. A machine can be seen in working order and ready to make tests at 230 Fremont

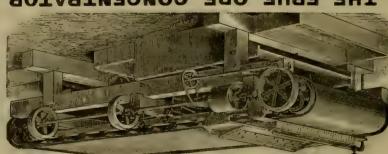
The Montant Globelt Country of the Montana Country (Limited), Lowdon, October S, 1885. Dear Sha :—Having tested three of you The superiority of your Venners, as is evidenced by the fact of our having setel two for the superiority of your Venners, as is evidenced by the fact of our having setel two for the fact of th

N. E.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 addi-al Frues and more stamps have been purchased. THE MOUTANA COMPANY (Limited).

Protected by patents May 4, 1869; December 22, 1874; September 2, 1870; April 27, 1880; March 22, 1881; February 20, 1883; September 18, 1888. Patents applied for.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

Room 7, No. 109 California Street,



AVANING WACHINE CONCENTRATOR OBE THE FRUE

FIVE HUNDRED AND FIFTY DOLLARS

(00'0995)

The present improved form of the celebrated "Triumth" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the contract manner; their trames being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built as compactly as their requisite strength will permit, weigh less, readiness of motion when operated. They are built as compactly as their requisite strength will permit, weigh less, replaced in front of and which their cost of transportation is reduced, and occupy less mill room whose set up, have the strength which their cost of transportation is reduced, and occupy less mill room whom the stees the discharge from the feed and amalgam bow! The improvement is in the replie is at cast motion which are strength as recently been introduced into their construction, which cannot be seen introduced into the states the statement is in the recipion of the discharge trom the feed and amalgam bow! The improvement is at the recipion of the discharge trom the discharge trength which takes the discharge to by the longitudinal unction of the staking frame to which the takes the statement in the statement of the efficiency and superintenants of mines in different mining districts of the Ontering such letters of testimony, and, as well, directions for setting up and operating these of sea decreased to send Circulars covering such letters of settimony, and, as well, directions for setting up and operating these pleases and set ready to quote special prices for any considerable order.

10SHUA HENDY MACHINE WORKS,

San Francisco, Cal.

"TRIUMPH" ORE CONCENTRATOR

A NEW AND RADICAL DEPARTURE IN

GENERATOR. **STEAM** 

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY. DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

SEND LOH CIHCULARS.

San Francisco, Cal. PACIFIC IRON WORKS,



MINING WACHINERY.

BRAYTON & CO.

A. HUNTINGTON,

MANUFACTURER OF

CONCENTRATORS AND ORE CRUSHERS, glieng Roller

Mining Machinery of Every Description,

Steam Engines and Shingle Machines.

SEND FOR CIRCULAR.

No. 45 FREMOUT STREET, - - -SAN FRANCISCO, CAL.

Centritugat Roller Quartz Mill,

IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS. CHILLED MHEETS CAR

MEDAL AWARDED, MECHANICS' FAIR.

OCCIDENTAL FOUNDRY, 137 First 51., San Francisco, Cal. TAS. W. KERR CHYS' B' STEIGER

INVENTORS, TAKE NOTICE! This paper is printed with ink Manufactory of the first of the search of the

Medart Patent Wronght Rim Pulley
For the States of California, Oregin and Noveth, and the Tentriories of Idaho, Wash
Montana, Wyoming, Usah and Arrisona. Lightest, Strongest, Cheapest and
Sest Balanced Pul-sy in the World. Also Manufacturers of

First Premium Awarded at Mechanice' Fair, 1884.

SHAFTING, HANGERS AND APPURTENANCES

SEND FOR CIRCULAR AND PRIOR LIST. EA

designation of 181 of 1

Ban Francisco, Cal.

PERFECT PULL

PORTLAND, OREGON.

SAN FRANCISCO. CAL.



Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES sug BOILERS. Mining Machinery, Steam Pumps, Wood and Iron Working Machinery

SEND FOR CIRCULARS.

-IMPROVED-

# BOCK BREAKER

AUTOMATIC ORE FEEDER.

cepting the Stamp Mill. This Machine is now Superior to any, not ex-

## DOOBLE and TRIPLE MILLS,

With Two or Three Rockers in One Mortar.

DOUBLE MILL, 2400. TRIPLE, 3600. SINGLE MILL, Shoes drop 1200 per minute

Single Mill, \$375. Rock Breaker, \$100. Automatic Ore Feeder, \$25.

IMPROVED, PATENTED and MANUFACTURED BY

Tatum & Bowen,

34 & 36 FREMONT ST., SAN FRANCISCO.

R.S. MOORE, Superintendent.

WM. H. TAYLOR, President.

HEINE SAFETY

# L. R. MEAD, Secretary.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

STEAM BOILERS of all descriptions.

SUCAR MACHINERY—Sugar Mills, Yecuum Pans, Clarifiers, Double Effects, etc.

STEAMSHIPS—Steam Capstans, Caryo Winches, the Clarifiers, Serew Propellers, Centrifugal Fumps, Steamchapp, Steam Capstans, Caryo Winches, etc.

Pumps, Steam Capstans, Caryo Winches, etc.

Milliang Company, Steam Capstans, Caryo Minches, etc.

Minch Company, Steam Capstans, etc.

Minch Company, Steam Capstans, etc.

Minch Company, Steam Capstans, etc.

Minch Ca

ECONOMA' DURABILITY,

AND FACILITY OF INSPECTION and REPAIRS.

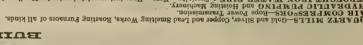
Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Wor k Hueter\_Bros. & Co., California Jute Mills, and other places. 60,000 Нотее Ромет поw in use.

Guaranteed More Efficient than any other Boiler made.

BAITDERS OF

WILSON'S PATENT GAS-PRODUCEE.

REFRIGERATING MACHINERY for Steemships, Brewerles, and Cellars.



**MATER TUBE** 

Manufacturers and Sole Agents for the Pacific Coast for

**BOILER**,

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces of all kinds.

AIR COMPRESSORS—Gold Power Transmission.

WEOUGHT IRON WATER PIPE a Specialty, More.—Have just completed order for 85 miles of 44-inch page of 4-inch incolors from two for 80 rails with a Sarwant Land Chringers, Starwant Land Chringers, Sinder Works Company, San Francisco.

STEAN ENGINES—Corliss, Silder-Valve, Popper Valve, Shomeric, Single, and Compound, STEAN ENGINES, Silder-Valve, Popper Valve, Shomeric, Single, and Compound, Starwant San Francisco.

60,000 horse power now in use or Readific Coast of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use or Readific Coast of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use or Readific Coast of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use or Readific Coast of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use of Pending Coast of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use of Pending Coast of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use of Pending Coast of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use of the Celebrated "Heine" Patent Salety Boller (Water Tube); 60,000 horse power now in use of Readific Coast Now in

MACHETH PATENT STEEL-RIM PULLEYS—Fifty per cent lighter and 25 per cent che tron pulleys; will not break in transportation.

the full weight of silver agreed upon, and are tested be-fore leaving our works, thereby avoiding the complaints NOTIOE.—All our plates are graranteed to have

JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

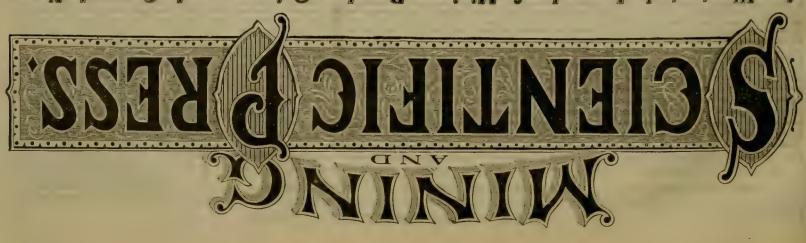
Assayets' and Mining Material.

HYDRO-CARBON ASSAY FURNACES Agent for HOSKINS' BATTERY SCREENS AND WIKE CLOTH

No. 108 FIRST STREET. SAN FRANCISCO NOVELTY AND PLATING WORKS,

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES. FOR SAVING GOLD!

NOTICE TO GOLD MINERS!



sonolos reluqoa gainim to learuob botertsulil reueta! pue

SAN FRANCISCO, SATURDAY, JULY 9, 1887.

mond-bearing ground giving out. On the conground is pelow that it was

One of the peculiarrice of the De Beers mine in the latter mine this does not appear on the

FIG. 2-SECTION OF THE DE BEERS DIAMOND MINE.

African Diamond Mining.

EVOLUTIOUED.]

The auritace except on the entire.

The amount of water the entire.

The amount of water hoisted from the mine. This mine differs from the Kim.

The amount of water hoisted from the mine, only one or two of which deserves a man, at a cost of 6d, per load of 100 gallons.

Are in use, only one or two of which deserves a man, at a cost of the mine, at a cost of which deserves a man, at a cost of the mine. The sacrage of the mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine. The average yield of a load of the sale mine.

main drift. These stopes are 18 feet wide, leaving pillars att to ebis redtie no betrats a piece of ground. Every 30 feet a stope or breast is shaft a drift is run through as follows: From the main notice. At Hall & Co.'s mined mined to white the "blue" is mined Are in use, only one or two of which deserves notice. At Hall & Co.'s ,

BY DEWEY & CO

se to be unsafe for further working, they will be blasted as the whole superin-

раме реев во виср мезкевеd the centers of the pillars, and ing 10 feet between the top of the stope and the floor of the stoped gallery above it. -vasi dirib mam edt 10 700ft 12 feet thick. The stope is carried up 40 feet shove the

a portion of them will be stoped out, When the pillars have been worked out, small drifts will be run through

", pjne basti dguordt mur ed lliw When sufficient ground has been allowed for The De Beers mine is second to the Kimberley | concentric rings of igneous rock, shown on Fig. | to the south of the Du Toit's Pan. There are the broken ground to become settled, drifts | in richness and value, and presents some feat- | 1 by the heavy broken lines, come up through | 1003 claims in the mines, covering about 23 cumbent mass caused to cave on the solid ground below.

er si bnrorg dael as costura bris from the ere stopes are oujui edt tae эпосрег рагс ΠI punoas

'etiq -əp дегвеать the works be buried un-Ila bas emit Bu y 18 Ino reel may octhat a 1961 owing to the precarious, pic is very bottom of the odt ni stlade by sinking gaiaim to bo

-sib edt to gairsed-baom Тре дерев

Victoria Cos.Shaft

cleaned up

recently тавая. Тhey

nearly 94 per

working the

треу аге поw

tadt betate si

were found in-

Rae process. The dynamos

tor eoroe for ear the state of the state of

-sas an exe-

they now

da llim sasl

been placed in the Dougдупатоя раче

тре смо пем PROCESS-

of a carat, be see enlay.

001.42 ai baol "enjq,,

acres. The yield of the

g loss to the companies. The Bultfontein mine lies

were producing diamonds at ley that both the Du Toit's Pan and Bultfontein mines

it was claimed at Kimber-

with little or no profit, in fact is 27-100 of a carat, value 7s. 5d. This mine is worked

yield of the ground per load mine, and contains 1453 claims of 31 feet square each, equal to about 32 acres. The

Ocher Mines.
The Du Toit's Pan mine
The De To the De Beers

000 gallons, at a total cost of £8000, being two shillings

ing the year 1884 was 8,000,-

-rub eaim sidt mont bequirq

only four-tenths of a carat,

ground near the surface was

VOLUME LV.

tor 100 gallons.

The amount tenths of a carat per load. while during the past year-

THE RAE

wholly unknown, nor has any attempt been ures worthy of mention. Fig. 2 of the cuts is a the "blue ground." This rock is from one to and Mr. Douglass, the owner of the mill. made to test it by boring or drilling deep holes. plan, and Fig. 2 a section, showing the mine at three feet thick and was thrown up after the certimates that he saved \$2800 worth of quick. from a six weeks' run,

Built. 150 ft. from Surface

FIR. 1-PLAN OF THE DE BEERS DIAMOND MINE, SOUTH AFRICA.

As mentioned above, the mine has been worked to get as an open and perior is a shaft has been mine has been made has been mine has been mine has been mine has been mine has been made has been made at the diameter than the working and method of working.

A DISCOYENY of method of working. A DISCOYENY of matural gas has been made has been made has been made at the diameter of the been of the dependent with no signs of the diameter of the page. The order working and method of working and method of working and method of working has been mine has b

Manganese, a trace.

#### The Land of Booms,

" And they sailed away to the land of bo

kind and character. There has been no period in the world's history when there was such a marked activity in large industrial operations a melody at this time, for we are having booms all booms the the line. In the East we have oil booms and traitroad booms and booms of almost every The shore and the man and the refrain evods edT

kind and observoter. There has been no period in the world's pietory when there was such a say use the world's pietory when there was such a reas piety now. When there was such a surface, Mover before were the world's progress. Mover before were the world's ware as planty now as were by the world's when there have been and specially contracted the world's worked activity in large latings of bridges, digging cantilly only a few hundership of the world's worked octavity in the daily cocurence at a deep man and a several brougard in the world's worked of bridges, digging cantilly only the world of the world's worked to bridges, digging cantilly of bridges, digging cantilly connected the world of the world of the world of the connected bridging cantilly world of the world of the world of the connected of and world of the world of the world of the connected of and world of the w

associates was located about eight or nine miles south of Daggett, in San Bernardino county, and and about 150 miles from Los Angeles. The and about 160 miles from Los Angeles. The asid, as any in the vicinity of Los Augeles.

Lis in the abape of a butte or mound, about latin in the shape of a butte or mound, about latin in the shape of a butte or mound, about be tigh, located in the center of a valley be the bilging up of a vein of ore that can be trome bilging up of a vein of ore that can be trome bilging up of a vein of the butte seems to broken up that all around the base of the butte, so of broken up that is all around the sace of the butte, so broken up that all around the area of the butte, so of those in the butte, so of the or or trun a car slongele and shoved and picto it on board. "There are traineds of the ore lating. The guality of this or is shown by the following quality of this or is shown by the following duality of this or is about by the following to the company:

In the company:

State

The sace of the content of the sace of t

E. C. Carre of Powellton, Butte county, has a gravel mine from which he recently took 246 ounces, or shout \$4425, as the result of 80 hours fun.

L. M. POTTEE is putting up a smelting furnace at a new find of carbonates within four miles of Mineral Hill, Berreks county, Nev. Mr. Stevens, formerly of the Eureks Con., is appertneedent. The smelter will start in a sperintendent. It was put up thoroughly on the few days. It was put up thoroughly on the merits of the mines, and not with a speculative view.

The spronger, muteges trace, where the traces in the states of the state

some associates, are interested in an iron mine not far from here, and the Tymes man questioned that gentleman about the location, supply, etc., of the find, In answer, Mr. Fanning associates was located about eight or nine miles and south of I Barers!

Deputy County Clerk Frank Fanning, with

Iron in San Bernardino County.

always country new their general periods and state and s

Our supply of material near home,—Los ous supply of material near home,—Los dealers and business men of San Erancisco, as well as their employes and agents, can read and write English, and a large annuber of them are subscribers to our various number of them are subscribers to our various that there are four journals appear regularly in Chinese. These journals appear regularly in Chinese, These journals appear regularly in Chinese, These journals appear regularly in Chinese, These journal—an editor and a printer. The persons to run a Chinese market present the present of the subscription of the portant person. He did not subscribe the subscription of the present subscribers and the propriet of the translator is the first and most interest in the translator is the first and the propriet of the condition. The translator is the first and the propriet of the condition of the condition of the condition of the condition. The califormation of the condition of the condition. The califors the first states the market quotations, the Chinese carefully. From these includes on the Chinese and the printer and the condition of the condition of the condition of the condition of the condition. The condition of the condition of

The Spangle (W. T.) Record says: Work for developing the mice mines just east of Spangle developing the mice mines just east of the long will begin next week, and it will not be long till the Salmon River mines and the Cean d'Alene mining excitement will pale into insignificance compared with the mice boom. With the present showing, the locators have been deep green and so will be present about.

THERE is a steady increase in the volume of over abipments from Keeler, Inyo county. About Darwin new claims are being opened up, and nearly all the old mines are paying better than ever before.

#### Production of Coal.

bind?

The country around San Diego is built up in messe or table-lands of light elevation with a much-worn material carried down from the mountains. Mumerous orecks, which are now dry, have out deep gulches into the beds of gravel and sand of post tertisty formation. The city of San Diego itself is built upon the long alope of such a mess, running down to the beach with a gentle descent, \*\* \*\* \*\*

The asphaltum beds of San Luis Obispo con-Yield in the United States in 1886.

duces.

Have torrents of some hydrocarbon been ductions duces.

Have torrents of some hydrocarbon been said and gravel, performing the disintegrating down sand and gravel, performing the disintegrating and removing work, in which water is generally the sgent? Or is the composition of immense growths of furcing a decomposition of immense growths of furcing the separate in the stands out in hold cliffs it has been where it stands out in hold cliffs it has been where it stands out in hold cliffs it has been where it stands out in hold cliffs it has been where it stands out in hold cliffs it has been bleached superficially by the sun. Holes and the other stands out of received a small caverns are also disclosed in the structure of the rock at such places.

The hydrocarbonaceous substance is not being more abundant in one place than in the configurent being and lustrous crust which in shape reminds soil and lustrous crust which in abape reminds soil and lustrous crust which in abape reminds soil and lustrous crust which in abape reminds gentle slope.

John 1980 of the configuration of the cliffs is expended in the stands of the configuration of the co Consuctey. ates and Territories.

Davotes

Moutener

Moutener

Moutener

Moutener

Moutener

Mounder

Moutener

Moutener 909'508'8 191'168'9 8 018'490 8 056'99'8

Total. Total and the services of the start, 12,756.

Total and the control of this Start and the case of Alex. Thompson ve, Wm. Spray, which is of considerable importance drom a disciplent of the case of Alex. Thompson ve, Wm. Spray, which is of considerable importance drom a disciplent of the case was tried in the Superior of this court, of this county. At the triel of the case was tried in the Superior cause it came out in the present of plaint, if it cases that the notice of location posted land. January 20, 1832, was signed by James Thompson, Jr., et al. The first case that the notice of location posted January 20, 1832, was signed by James The first cause of the Library 20, 1832, was signed by James The first case that the color of location posted was of California, Later on an amended notice was offered bearing the case on an ended notice was offered bearing the case of 21 west start of containing a fuller description of the copy of the case of 21 west of the count of the contain of the contain of the count of the strong case of 21 years of locates a mine of same tase and could not be seed of 19 years to locate a mining laws of the Scaling. The law of the ground that the plaintiffs appealed, holding that the mining laws of the over the seed of 19 years to locate a mining laws of the Scanes to locate a mining laws of the same the seed of 19 years to locate a mining laws of the form the seed of 19 years to locate a mining law of the count the plaintiffs appeared, builted States do not require a the mining law of the count of the same of the same where the mining law interest. On the same of the mining law interest of the mining law in the right of the declaration to obtate will be awaited with interest. The law and orders the hidser case will be awaited with interest. The mining law of the cone of the mining land has been declarated and on the sease wherein the right of the declaration in the said of the winter of locate mining land has been declarated and orders the mining land has been declarated and on t DURING the past few weeks the Providence Castry Mining Co., Nevasto county, has shipped 216 tons of sulphurets to the Selby Works in San Francisco. They have made arrangements to ship 1000 tons, and yet there will remain on the dump between 5000 and 5000 tons emore. These sulphurets have been worked at their will once, and it has been demonstrated that it will now a mot it. I have made the second consists of the country of the second co centent for paving streets, not needing a pretions admixture of sand or other needing a predivided as here to see they are they are of persons who, for a better term, may be
communities, not excepting our town, a class
classed as her room prospectors—they are of
all shades and opinions, and may be found
all shades and opinions, and may be found
all shades and opinions, and may be found
ferful supplotts in mining, and how rioh they
where they do all their prospecting (for
free drinks) and are wone to relate their woneform groups and are wone to relate their wonways willing to throw cold water on those
of outside capital, are trying to keep the great
from growing in the streets of their town.
These would be quartz sharps who examine
of outside capital, are trying to keep the greas
why willing to throw cold water on those
of outside capital, are trying to keep the greas
why willing to throw cold water on those
of outside capital, but street all have asfrom growing in the streets of their town.
These would be quartz sharps who examine
to salf, or the street of the presense one who may be sent up to examine
to eath, not to work. The public to well, not to work a button
took through a bar-room tumbler at somebody's
some one who may be sent up to examine
to salf, not to work. They all have a mine
to salf the nearest asloon and is very riob in
mice varies from six bits to \$50,000. The
toward the nearest asloon and is very riob in
mice or look as all one of these natities retoward the nearest alone as hole to the part ser
toward to have not out out out out out out
years, and are about as able to duge a quartz
derred to have not out out out out out out
years, and are about as able to duge a quartz
and are shont as a they are to recite the part is
does at they are to recite the cape of a quartz
does at they are to recite the cape of the part is
become one who have the content to the part is out of the part to the part of the 

THE Oroville Register says: The Big Bend tunnel is being driven abead at the rate of 50 feet a day. This is exceedingly fast considering the vast amount of rock there is to handle, and the distance it has to be hauled. THERE is used to be \$3,000,000 in sight in the Water of the Magontown, Idaho. The Shasta Courier says: Bullychoop is respected the liveliest mining camp in the country ported the liveliest mining camp in the country last now. Bullion is coming out of the militor is conting out of the militor is confidenced. We are glad to note that the clouds are little from the old monatain and hope that the amenine of prosperity may always glean upon her and the me who have alond absent.

Southern California Asphaltum.

The old Spanish settlers and missionaries had a great veneration for saints. To rivers, mount a great veneration for saints. To rivers, mount ains, valleys, churches—to many insninate ains, valleys, churches is most liberally spinished. Is this, perhaps, accounted for by the plied. Is this, perhaps, accounted for by the this shallon to acknowledge and give reverend in holiness? And is the said adjective used in this fashion to acknowledge and give reverend the sandern of nature produces in human mind, doing honors at the same time and paying homboring honors and the produces to the produce for a paying homboring honors and the produces are produced the produces and the produces and the produces and the produces are produces and the produces and the produces are produces and the produces are produced and the produces are produces are produces are produces and the produces are produces are produced and the produces area

The following is part of a letter written by Carl A. Schenck and sent to the Press, after a short stay in San Diego and San Luis Obispo

The San Diego Mesas.

COAL AND OLL DEPOSITS IN SOUTHERN CALI-DENIA.—Learning that W. A. Goodyear, the

Pacific Coast Lumber Trade.

oient to indicate the existence of an oil-field. It is not known in whose interest the well is being sunk. Report has it the Standard Oil Company, and then again it will be some other company. They are still einking the well, however. As soon as the indications of oil appeared, a mining district was formed, and Mr. Crasan informs us that a large part of the Val. Crasan informs us that a large part of the Val. Crasan informs us that a large part of the Val. Crasan informs us that a large part of the Stocker on the Crasan informs as the second of the well now both which we do not be second of the well now before a large section, but will probably await the developments of the well now going down before velopments of the well now going down before the well of the section of the well now going down before the crassing machinery to work on their part of the field.—Freene Expositor.

#### Gas Kilns for Burning Fire-Brick.

ed ot noitnetta faisega beriuper sad sessa The introduction of processes using very high heats, like the open-hearth steel and the basic

paid to fire-brioke. It has become necessary not only to have the bricks of a muoh better quality, but also to have them bringed at a muoh bigher temperature than formerly. It has a formerly, It bricke bernound that if bricke bernoud stat if bricke bernoud stat if bricke the process in which they are bricked, in they are only they to undergo on side they to undergo on side they to undergo on the stat of the area to be used. It is a large to the stat of the s

perstion. Small quantities of a beavy quality. There to the same name, valuable wells are in Change of Firm.—Thomas F. Rowland of Portsoleum have been found at Anahelin. but they are not yet well developed."—Sam Diego an incorporated concern under the title of Confirmation of The Works, which will confirme the title of Confirmation of The Change of Confirmation of The Change of Chang

## Mining on the Trinity.

Anning on the Humboldt Standard,
writing from China Flat, says:

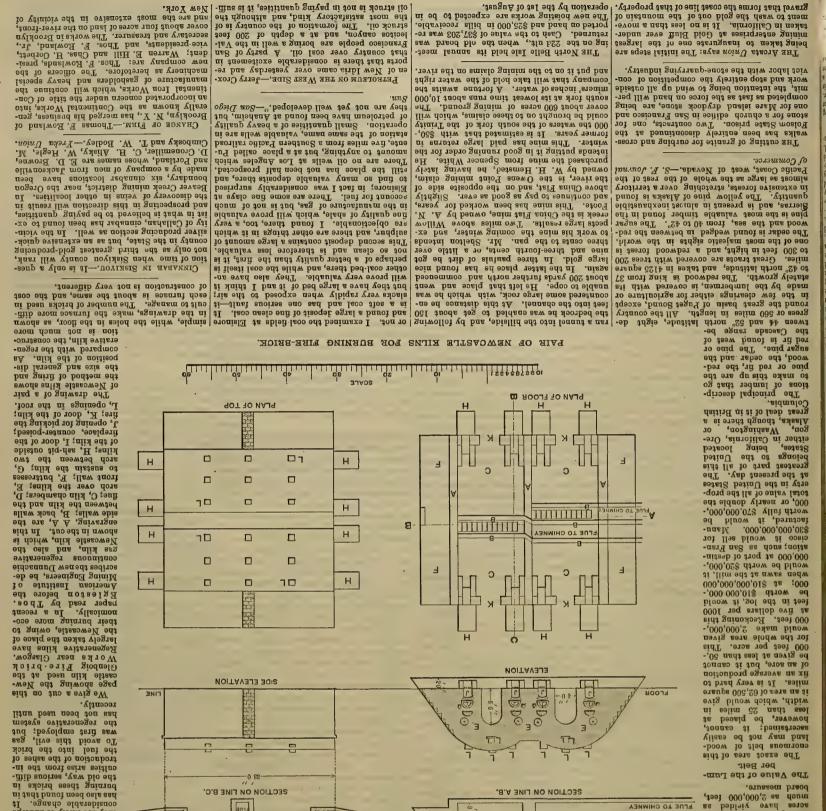
About the lat of last February, Mr. Thos.
Dauges, while out muting, discovered a fine broves of the lat of the lat of the lat of the bronch of investigation, or investigation, brows to be a back obsamel, or, in other words, a former bed of the Trinity. He at once properts the at once properts the and was rewarded with cone of the finest prospects that Wm. H. Hemsted found on the river, He and Wm. H. Hemsted of the opened that the cone of the flatest prospects that Wm. H. Hemsted found on the river. He and Wm. H. Hemsted found on the river, He and Wm. H. Hemsted found on the river. He and Wm. H. Hemsted found on the river. On getting it opened to be day one of the discovery of the river. On getting the peace of which in the same to be day the latter is rather in excess of what it is gentenly thought it will pay. Two miles below then latter is rather in excess of what it is gentenly thought it will pay. Two miles below then are observed in the same observed. Mr. Shelton, finding gravel, large prospects. Mr. Shelton, finding gravel, large was mean the manual finding gravel, large was mean the manual finding gravel, large was mean the mean the manual finding gravel, large was mean the manual finding gravel.

bone of the continent, ranning from the frozen people have in the main to look for their eupp-plies. The forests of North America have al-ways been known as among the greatest on earth, and the greatest of North American for-ests are found on what may be termed the back-All the great mountain ranges of the world are, or tays been, sovered with forests. In the Old World some of the principal forests have been destroyed in the churse of long ages. It is, therefore, to the New World that of collections are the first principal and the property of the first principal and the property of the property of

The Arcata Union says: The initial steps are designed for the held its annual meet-being taken to inaugurate one of the largest ing on the 22d ult., when the old board was mining enterprises at Gold Bluff ever under returning enterprises at Gold Bluff ever under returning enterprises at large in the same of the mountain of the same and \$25,000 in bills receivable. The mountain of the mountain of the mountain of the property.

The mountain meet-being meet-bei

hose of the continent, running from the frozen coesa to the lethmus of Passma. Those of the coesa to the lethmus of the Mississippi, and of the Mississippi, and of the Mississippi, and of the Canada, as any time could only be locked upon as thinly scattered groves of septimes, when compared with the great woods of the Pacific, The only of the Cast Range, and of the compared with trend, of the Sierra Mevadas, of the conntry between the construction of the cast Range and the coesar, have been thickly, indeed, that some coesar, have been thickly and of the cast shown of creates and the coesar, have been thickly and the coesar, have been thickly and the conntry between the cast and the conntry between the coesar, have been thickly and the country between the coesar, have been thickly and the country between the coesar, have been thickly indeed, that some access have yielded as the conntry between the coesar, have been the coesar, have been the coesar, have been thickly and the coesar, have been the country be and the coesar, have been the country be and the coesar, have been the country be and the country have been the countr SECTION ON LINE B.C. SECTION ON LINE A.B. polytic of the State Mining Board, was in the goologies of the State Mining Board, was in the goologies of the State Mining Board, was in the goologies of the State Mining Board, was in the him out with a vive of gleaning some factoring the prospects for fuel and edge concerning the prospects for fuel and object the gatter. Wr. Goodyear asid that he was out to prove of the gatter relating to the coal, petroleum and material gas resonces of Southberr California. However, we seem to me the collection of the short fame, as the material gas resonce of Southberr California. The had spent some time in and around Los fame, as the had a spent some time in the complete for the portions of Kerr, Inlare, San Bernardino, Inyo, Fresno and other falers, San Bernardino, Inyo, Fresno and other there are outlook in this owners of 'As to counties in the complete mer and other petroleum or natural gas," said he, "there has been no prospecting done as yet, and no man oan teel hyber, south of the make and pring on the subject, and to not be nothed to man on opinion on the subject, and do not one to include the control of the subject of the control of the subject, and to not one of the subject, and to not one of the subject, and to not the indications are formed and the subject, and to not one of the subject, and to not the indications are formed and the subject, and it is will take the indications are favorable, but it will take of the subject and the subject, and the subject, and the piece of the piece of the subject and the subject, and the piece of the subject of the piece of the subject and the subject, and the piece of the subject of the subject of the piece of the subject of the subje



them and not to make sales. The Risks in Gold and Silver Mining, the latter to do hoisting, etc. There are severally and briefly not long since on the certistic with which mining results can now be working the mines there for what there is in the certistic and the certistic of the mines there is the most compared minimal most.

### An Ingenious Device.

depth of the load in the cartridge, and the depth of said load depends to more or less extent on the thickness of the wads used. adjusted that its proper action depends on the disparity of wads causes irregularities in the crimping of the shells, since the crimper is so sartridge-loading machine, it is found that this as that class represented by the "Obamberlin" cherefore, in automatic cartridge-loaders such paper of unitorm character. In loading shells, they come from the factory, may be separated into lots of uniform thickness. The ordinary wads which are cut from sheets of wad-paper or pasteboard vary in thickness, since it is not pasteboard as to manufacture this wadse are used for loading shells in cartridges, so that wads of varying degrees of this wads of your rest. partment. It is a device for sorting wads such he has been using some little time at the works in connection with the shotgan cartridge de-Prenties Selby, the superintendent of the Selby Smelting and Lead Co., has just patented through the Minnie and Scientific Parest Patent Agency a very novel wad-sorter, which has been the minintendent at the manner of the patent and the second sec

several plans to sort them, but none were satis-factory until he finally invented a little ma-chine which does it perfectly and automaticmaking the cartridges properly on account of the variety of thickness of the wads. He tried Mr. Selby, who uses the Ohamberlin ma-chines at the works, found great difficulty in

ess in every way. chine works smoothly and rapidly, and is a sucubsequent operation of crimping. The maedt ni fleda edt gairnjai to regash on nedt si in the shells, and the depth of load in all the cartridges of that lot will be uniform. There de used with any fixed amount of with besu ed ive grades in the various boxes. The wads once sorted, those of uniform thickness may erly graded and sorted, and placed in respectthe end of the series; but all the wads are propthrow it into its spout, and if very thin it will not be removed from the table until it mears the wad is pushed into the open mouth of a spout which leads it to a box. Should the wad be very thick the first finger of the series will bouches or hits it as the finger flies out, and on in the circle by the revolution of the table until it comes in front of one of the fingers, which the finger passes over it. The wad is carried orter flies out, if the way at a first ort of the point of the point of the print o wad-carrying table brings the wad in line with inoh longer, or they may be graded to any de-gree of nicety. This variation of length con-tinues around the circle. The revolution of the na lo becoseding shout a thirty-second of an feed-spout is the shortest of the series, each eesdy abaw edt tarying the wade. These envloying plate eart one train ent the first one train and the first one train and the carrying the control of the control of the control of the carrying the control of the carrying the c and an anoisivib and to ano revo gaissag regard center, and then all fly out from the center, each and brawot ylancenstlumis awarb era sregad radially, a set of wire fingers or sorters, and by suitable needanism of simple character these ed for it. Above this central table is arranged table, which is laid off in sections, each section made to hold one wad. As the table revolves, a wad drops from the feed-spout into the space argnitator leates a revo taqe-best reladut a ni The circular wads of all grades of thickness, just as they come from the factory, are placed

them constantly wet. in which timbers sconest decay are those where is occasional and partial moisture. The timbers last where the flow of water is sufficient to keep second out tadt leanus outus edt ni banol si TI not require shedding. Some of the treatles are

distance of 16 miles, will consume 15,000,000 feet of lumber in their construction. A number of lines and treatles along the line will

the "switchback," in Washington Territory, a

THE snowsheds to be erected on the line of

now progressing. ing purposes. Work of developing the mine is ered about six miles from Easton, Or. It is А Ѕемі-Вітпилиота сові раз реев dівсоу-

reason of these numerous agents of loss and among the cattle. Fires sweep the prairies and the forest lands, while floods and cyclones everywhere kill and lay waste. And so by tent in other countries, having suffered from the depredations of similar pests. There is nog cholers among the swine and other discases dustrious louse, as in the State of New York, is doing for the hopyards; the grapevine in some portions of California, and to a still greater ox blight has fallen on the cotton plant, or the ingrowing regions or a partial failure of the wheat a harvest over extensive districts. Elsewhere a world over; now it is a short crop in the ricelo ylish hash of some tast stroger end mories for whole some and reduced and stroke in one transfer the whole We remarked briefly not long since on the certainty with which mining results tath the sour nost compared with those that gather controlled a Three courses gather settings of the long to the course of the course

and counted upon, nor will he have any trouble ertain; it will bring the producer just what he essined as a busined is pursued as a lousiness no se free se set the few thought of the set of the will be next year, and the next, and indefinitely will be found that the aggregate output at the ond of the year will be within a fraction of what was predicted at the beginning, and so it was expected. Look to the Pacific Coast, Mexico, South America, Australia, Siberia, and it gold and silver mines will, as a whole, be vidual cases, but they do not extend to entire There may be disappointment and loss in indistatem successed and rot gainim driw os told devastation the products of many industries are largely diminished or wholly destroyed.

judgment are exercised, be reduced to a minperience, they can, where caution and good guarded against, though, with our present expay ore. These cannot well be foreseen or in mining for the precious metals consists in the cost of dead work, and in the failure of The principal element of uncertainty involving the employment of much capital or directed human effort are as few probably in this branch of mining as in any other pursuit Every calling is, of course, attended with in finding for it a ready market.

#### Wire Silver.

these specimens. The pieces are found in the mine pressed on one side of the decomposed There is not a particle of quartz in either of ver in a tangled mass, scarcely any quartz at all showing. One piece weighs 32 ounces, and the owner has another weighing 56 ounces, wire silver, there were a dozen or more solid seces larger than a man's foot of pure wire silman. The specimens are wonderfully rich. In addition to a cigar-box packed full of fine Mineral Park is 18 miles from Kinggood fortune to examine. They came from the Rural mine, Mineral Park, Modave county, Tuo need rever it has ever been our We were shown this week some of the finest

hoists has just been sent down to the mine. of the Pacific Iron Works, Baker's horse-power was as far as they could hoist by hand, and one In the mine they are down 100 feet, which

up to 25 ounces in gold. the ore carries gold, seldom less than five ounces and upward to 10. Some has assayed At the present depth they are coming into native silver with less of the wire variety. All one of quartz in 100 pounds of the "ore, s ed ton lliw eream there will not be a In places on the main chimney it is 10 or 16 inches wide, most of it solid in silver. In eet wide and the ore seam three to four inches. The ledge is trom three and a half to four

the ore in the most satisfactory manner to the fied with the sampling here. With high-grade or it is somewhat difficult to get it sampled or it is somewhat difficult to get it sampled sampled. re, now here, expressed himself as fully satishave been shipping to Pueblo, Socorro and here. Mr. Chas. H. Lawrence, one of the owntion works at the Rural mine, and the owners and 479 ounces of silver. There are no reduc-Selby Smelting Works, and yielded \$171 gold Some 17 tons have just been worked at the

Fail to Grasp the Situation.

legislation they are, of course, worth just as either business or speculation. As guides to inco these fiscal calculations are so uncertain to size of the basis of than ever. The truth is, the factors that enter and is now coming into the country more freely Gold has all the while been flowing this way, prediction, but has had the contrary effect. shock of that meet as to produce widespread stock of that medical and commercial embarrasment, In so so tar as a more liberal silver policy party and party party and party liberal values of the product and, if adopted, would soon so reduce our it would tend to drain the country of its gold, The chief argument urged against a more free taking a state was that the United States was that

further detract from their worth. dering them very often of little or no account; all these being apart from self-interest, which, as in the case of the monometalist, comes in to prognostications, whether for good or evil, rensaters, constitute some of the uncertain ele-ments that tend to impair the value of these rence of sweeping floods; the prevalence of plague, or the happening of other great disor dullness in trade, manufactures, other line of production; the occurs short crop of any of the more import-ant agricultural staples; unexpected activ-Threstened wars and rumors of ware; .elatil

mand dere for making obange, retail dealers being often put to much inconvenience through an insufficiency of it for such purpose. Some of the smaller coins are at this time extremely no one refusing to take it in considerable sums without discount. It is almost always in decoined. It is with our people a favorite money, a good deal of the metal and immense quantities come into the State to be parted, refined and of silver in California, although we produ not all enter at once into circulation, it is then in shape to circulate should there be call for it. We have never experienced any glut and is willing to pay cost of coinage. If it do every ounce of silver mined in this Republic onght to be coined if the owner so desires, being sent away to other countries? Not a dollar per capits of our population. We believe annually, when they come to be distributed among 65,000,000,000 inhabitants, a good deal of it 000 of silver or a little more, which we produce more gold, and silver too. All ther is produced fails to meet the demands of our vast and rapid-ly growing industries, which, it is believed, might readily absorb and assimilate much more than they now do. What are these \$50,000, which may a little more which we present the confidence of the confid that of our business and population. As for these United States, our increment of the precious metals is not keeping pace with

growing commonwealth to legislate or even financier intelligently. have an invelligent understanding of the condi-tions, wants, and capabilities of this great and the will sail source the effect to demoralize the financial and a first source of the heavy augmentation of its metallic currency, whether it be gold, silver, or both. These men who are so timorous that a few additional silver interests being at a like ratio, which has three States seeking admission to the Union, with territory to make a dozan more, can stand a s million a year, the growth of all its material profit. A country that is increasing the num-ber of its inhabitants at the rate of more than testingm ruo of the triment but to our manifest to prosecute, and our many new industries to build up, might absorb to almost any extent, territory to settle, our many new enterprises we, with our virgin mines to work, our vacant for their sluggish currents of trade; but which who, with their decaying energies and their un-certain future, may not feel like engorging their currency with a metal too oumbersome effete and moribund nations of the Old World, If there be need for worriment over this silver question, we may safely leave that to the

The parties who are said to have organized the mine belongs to Christie & Lawrence. Lac, Milwaukee, Kansas City and Montreal. They employ ten white men and six Indians, upon false representations, have met and per-fected an organization of the several companies. senim enozirA ni beteevni eved ot mislo odw ABOUT a dozen residents of Oshkosh,



A. T. DEWEY.

DEMEX & CO., Publishers.

Office, 220 Market St., V. E. cor. Front St., S. F.

Terms of Substribtion.

Through Structure of Substribtions will be seen a substribute so that the substribute of Structure.

The substribute of Structure of the substribute of the subs

Advertising Rates.

Large advertisements at two male rates. Special or canding notices, legal advertisements, notices, legal advertisements, notices of the paper, as special rates, from tingertions are rated in a month. Address a little rate, from insertions are rated in a month. Address all liteary and business correspondence and Direits for this paper in the name of the firm.

Our latest forms go to press on Thursday evening

Entered at S. F. Post Office as second-class mail matter

SCIENTIFIC PRESS PATENT AGENCY A T. DRWEY & CO., PATENT SOLICITORS.

Saturday Morning, July 9, 1887.

### TABLE OF CONTENTS.

ILLUSTRATIONS—Section of the Debeers Diamond Mine, IY. Clay Lane Furnaces; Diagram of
Drift Showing Seathand a Brombed Miners, IX.
BDITORIALS—African of Brombed Miners, IX.
Events, Fail to Chape plue Silver; An Ingentions and Silver Mining; Wre Silver; An Ingentions Boylog,
and Silver Mining; Wre Silver; An Ingentions Device,
and Silver Mining; Wre Silver; An Ingentions Device,
MISOELLANDOUS.—Southern California Asphaltrem; Freduction of Cost; Iron in San Bermerdion
Der Trade; Mining on the Triality; des Kilns of Demonstrations, Den Trade; Mining on the Triality; des Kilns for Burning Fire Brick; I.B. Lakality of Mercantile Agencies;
Mexico Becoming Progressive, 25.
Mexico Becoming Progressive, 25.
Mexico Becoming Progressive, 25.
Mexico Becoming Progressive, 25.

Mexico Becoming Progressive, 23.
BOHANIOAL PROGRESS.—Waste of Fur-nace Heat Under Boilers; Large vs. Small Boilers—

nace Heart Under Botters, Large vs. Small Botters—
High Presentes, 22.

GOOD Heart Under Brother, Large vs. Holotory
Froge Spittle, 22.

Suring Profits with Employee, Breach Making, 23.

Sharing Profits With Employee, Breach Making, 23.

Sharing Profits Via Brother vs. Holotory
From Strain Strain Strain Strain Strain Strain
From Strain Strain Strain Strain Strain
Blessees, 23.

Diseasee, 23.

Diseasee, 23.

Dissace, SS.

MINING SUMMARY—From the various counties of California, Nevada, Arizona, Colorado, Idaho, Mor tana, Yoshing, S4-6.

MINING STOOK MARKET—Sales at the Salfrancisco Stook Board, Motices of Meethings, Assessments, Dividends, and Bullion Shipments, SS.

#### Впаілеза Аппопловтель.

Anti-Incrustation Powder—J. C. Winans.

#### Passing Events.

need and svils tuo mem ent guitteg to equalification en the Comstock. Up to the time we go to press the connection has not been made, and ned miners in the Best and Belcher drift, The whole mining community on the coast has followed with the deepest interest the progress of the work for the rescue of the im

and the mines already discovered are giving an excellent account of themselves. prosecuted. More stamps are being put up, San Francisco capitalists have now large inter-ests there and prospecting is very vigoronaly Alaska is to be a great gold-mining country. It is becoming every day more evident that

of our national holiday have broken in on busi-ness matters more or less, but everything bas again settled down to the usual routine. The festivities attendant on the observance

The finding of water at the Lapanta, Haw-thorne district, is a piece of good fortune for that camp, as it will result in the building of a mill, which has long been needed there.

boom. With the present showing the locators soim edt dtiw beragmoe eenselingieni otni the Cour d'Alene mining excitement will pale of Spangle, will begin next week, and it will not be long till the Salmon River mines and Mich.—The Spangle Record, W. T., says: Work for developing the mics mines, just east

to go East by the southern route. it to the East from the more southern ports; so redwood and other California lumber is likely than to San Francisco bay, and \$2 less to ship TEE Fort Bragg Lumber Company says it store for 1000 feet to take Immer per 1000 feet to the mills to Los Angeles and San Diego

#### The Imprisoned Miners.

level of the Best and Belcher mine, and of the efforts made for their rescue, then already con-sidered well-nigh hopeless. These efforts have since been kept up and pashed with all possible In the last issue of the Press we gave a de-tailed description of the recent dissector on the Comstock lode, including accounts of the miners who had ecceped with their lives, the ramber up to that date taken our dead, and the situe-tion of six others still confined in the 1500-foot

advantage or disadvantage gained or lost by their substitution for the 9-foot bell," There is a great diversity of opinion as to the presi-proper shape of the blast furnace. In the presi-dent's address of the Cleveland Institution of Engineers, Mr. Hill says: "' will give you an accounts of some experience of the working of furnace and 85 feet historical and Ol teat directors 6 inobes, 12 feet 6 inobes, and 13 feet in diameter, respectively, and I must say that since they were put in I have not observed the least feet in diameter. They now have bells 11 feet naces, I should certainly build them as shown in this diagram. I may here state that for several years the Clay Lane furnaces had bells 9

A good deal of capital is now going into the north energy for an entire week, but without reaching Alaska mining regions, and it is predicted that the unfortunate men or even determining any.

#### Alaska Gold Mines.

0 0

CLAY LANE FURNACES.

along the drifts like a serpent and renews itself as the as cleared away. While one portion settles, another rises and swells. Timbers 12

The above diagram is taken from the official Early in the week it was found that the foured inch iron pipe, through which air was forced inch iron pipe, through which air was forced there will be 800 or 1000 stamps at work mext thing as to their exact position or their fato, year in the southeastern portion of the Treadwell mine has 120 etamps now, and is to have \$240 stamps.

The property of the Treadwell mine dead.

The stamps of thing as to their exact position or their fate, in size or broken squarely in two. With these though, of course, they must by this time be all tremendous natural forces at work it is not dead.

Diagram of Rescue Drift.

Diagram of Rescue Drift.

The liveliest town in the Territory is Juneau,

Unga island are some distance for, but are be-ing developed, and it is stated that the bonanza

firm are interested in them.

" Upon considering the whole matter, after and knocked down the materials. I had also pur-put another hole through the side of the furhalf trucks of coke were put in through this hole. I then, with long bars one and one-fourth inch diameter, worked through the hole see the ends of the courses of bricks on the op-posite side. I also discovered that she was nearly empty below this point. Two and a a bas owT were in really good condition, and I could self, and found a complete arch of hot coke mixed with pieces of limestone. The walls beupon the part where she had first fastened herher, I determined to cut through the side of the furnace, and at B (see Diagram Mo. I) I made a hole two feet square, fortunately hitting out putting in any materials until the doors not putting in any materials until the tom the were down not less than 50 feet from the oblanging plates at the tog. Still the from the diagnosher, I was altaid I should completely empty her. The blase still not going through per, I defermined to out through the side of tried, by freely blowing out the coke through the slag-hole, to move her, and only partially succeeded. Then I determined to carry on with-

week we got very little blast through her.

third furnace, from some cause or another, was more stubborn than the other two, and for a

the furnaces commenced to refuse taking the blast. I adopted every expedient in my power to get them away, and managed to pull round two of them, but not without difficulty. The

resoned about 330 tons per week. Wishing to make more, I inoressed the size of the noxzle. A few days after this was done in each instance

full lines on No. I of the cuts are the lines to which they were erected. They worked quite satisfactorily up to the time their make had

of bosh, which I have under my charge at Clay Lane. The furnaces were originally only 70 feet high, and were simply hightened. The

furnaces, each 85 feet high and 20 feet diameter

Clay Lane Furnaces.

iron also was one of the causes for her betoo steep (73°), and that the making of No. 3 capacity, and that the angle of the bosh was seeing her condition, I came to the conclusion that the quantity of blast was too much for her

gases being large and not having room to exfrom nose to nose. The volume of ascending

pend, and the temperature in the furnace high They have been crushing 300 tons a day for up at the time, the consequence was that the the time, the crush 600 tons. "The tuyeres were placed 7 feet 8 inches

BEZCUE

right. Before we blew her out (which we did to visitate towor and its standard and standard and standard all a formation and standard and st dened the furnace for obstruction, I reduced the nozzles and burbreaking down the furnace became entirely choked. After Allaga, fitar gaitelum, stuck, gradually accuthese the coke readily oT .noitibno the bosh-lining came to be in a pasty or semiands of the bricks in

per week of good gray iron. and are continuing to make upward of 400 tons without my taking any such extreme measures,

turn out every week at least 520 tons each of grey iron, and they often make 550 tons.

Good gray iron, and they often make 550 tons.

They have 6 tuyeres equally divided around been taken there. The gold quartz is richer than heart to build any more fur. furnaces have worked well from the first, and turn out every week at least 520 tons each of greater cubical capacity (25,500 feet). "The other three intraces at Clay Lane are built upon similar lines to that shown on Dia-gram Mo. 2, excepting the diameter of the feet, and the top diameter under the bell is 19 feet instead of 17 feet, consequently they have greater cubical capacity (25,500 feet). These

"Miners Here Entombed, 8 שבפג א שברכאנצ סעוצג

9

He believes that the stone is a valuable acquisods, of great value as an ornamental stone, hard and durable and capable of a high finish. Tehama county, a specimen of which he obtained recently and took East for examination. He states that it proved to be what is known as "pectolite," a hydrous silicate of lime and so, of erest value as an orrestential stone. bad made short the stages as shown the diagram. The orthogon is also found that the first the condition from \$5 to \$13. A Boston syndicate is also diagram. The orthogon is a special condition for the stage as shown in the dotted lines on the diagram. The orthogon is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble, came round is a special condition for the first trouble capture and the first trouble

inches thick are gradually reduced two-thirds

siwaro ti litun gairedmit edt neewted mori changes and the miner meets it in unexpected places. At times this force forces clay out

never at rest, but yawns, breathes, con-tracts, expands, crushes out drifts, closes up old fissures and opens new ones with-out apparent cause. The direction of pressure

and bewildered. But here again it is evident these people are talking without knowledge. The Cometock, like all great fissure lodes, is

Some people, too, have been disposed to find fault with the mining companies for their supposed insecurate measurements of their underground works, whereby the men having these ground works, more in charge have been misled

distance further south. The distance should be covered in less than 36 hours, but a drill hole, he said, might get through by Thursday after-

tadt gaivinb bas reqeeb teel xis bas eva aeew: winze, and that connection will be made with the Best and Belcher orossent in sinking be-

eniregua ent lo tnemearobni aid ni citadqme ai gineer Wrinkle, who has done most of the underground surveying on the Comstook lode,

Superintendent Patton's judgment in the course in the plan he has pursued. Generally, however, the plan adopted by him has met with approval. En-

were disposed to question the soundness of

Best and Beloher north drift. The result of this driving has been terribly disappointing.

Na driving the resone drift drill holes have been sent out in nearly every directing the ing the ground and in the hope of piercing the

where connection will be made and beated.

M. S., E., W., cardinal points of the com-

No. 8, the point (indicated by a black line)

No. 7, the point the rescuing party had

tical hight of the south drift in the Con. Cal. No. 6, dotted line 35 feet in hight, the ver-

tance horizontally between the end of the Con. Cal. & Va. above the drift in the Best & Beloher.

evad eredt gaileel eidt tebaU

eached at last accounte.

PECTOLITE. — Wil. il. liam P. Blake has written a letter to the

By the time our paper is issued, their bodies will, no doubt, have will, ne doubt, have

alive has been cut off. the imprisoned miners Zaiband do sonsdo lls

and the flower level of the lower level of the had been broken off the flower of the level of th

sition to the ornamental semi-precious stones of the Pacific Coast.

to get it out. He says that men who will work can make good wages chloriding, and tricts down that way where nothing is doing on the special and the special spe Darwin country. He writes that several disprospector from Virginia City is nov acted THE Inyo Independent says: An experienced

No. 1 represents the south drift on the 1500 level in the Consolidated California & Virginia Description of the Diagram. entombed. It also gives an accurate plan of the work in progress to reach them.

in the Beat & Belcher, where the six miners are

No. 2, a vertical winze 16 feet in depth sunk

No. 3, the incline winze which, when comselow the floor of the south drift,

to connect with the Best & Belcher north drift. pleted, will be 45 feet in length on the slope leading from the bottom of the vertical winze

No. 4, Best & Belcher north drift.

No. 5, dotted line 30 feet in length, the distribere is plenty of room for a large number.

Berner bay, on Lynn canal, some 40 miles morthwest of Juneau, is attracting considerable mines, as nobody has come back from there so which has a population of 1000 white and 2000 Indians, Sitka has about 300 whites and 600 Indians. There is no late news from the Yukon

Waste of Furnace Heat Under Boilers.

MECHANIGAL PROGRESS.

## SCIENTIFIC PROGRESS,

Random Notes.

"Silotwor" is a new explosive ten times the strength of gunpowder, explosive ten times the strength of gunpowder, explosing without a move or noise. A Lussian invented it.

A recent computestion makes the velocity of the solar system in space only about 10,000,000 miles in a year.

525,000,000 miles in a year.

To sid in an analysis of noise, Prof. Crum Prown of the Evoyal Society of Edinburg bopes to be able to make a machine to give very loud imitations of vocal sounds. He expects the apparatus to hise with thousand-man power.

A large piece of meteoric iron has been found in a bed of terriary lignite, Upper America in a bed of terriary lignite, Upper America geological periods, a proof that meteoric stoned that is a bed of terriary lignite, Upper America geological periods, a proof that meteoric stoned sell site of in former periods of the earth's existence.

neighborhood, say, of from 75 to 100 degrees above that of the temperature of the steam in the boiler. It is impossible to get the temperature of the uptake any lower than the temperature of the uptake any lower the volume of heated gases passing through the uptake at this temperature is precisely the amount of heat that is precisely the amount of heat that is dose not represent the total amount of the leat dose not represent the total amount of the heat lost

to the treat is produced by the smokestack in a well-set boiler, but does not represent the total amount of the heat of the smokestack in a well-set boiler between the total amount of the heat of the boiler is quite an important item work of the boiler is quite an important item as an absorbant of heat. In setting a boiler, sea an absorbant of heat, In setting a boiler, sea or four inches in breach, in order to destroy the conductivity of the brickwork and reductivity of the total heat generated is lost our from the control the state of the brickwork.

The mover get out; in other words, we leave our new the brickwork and the reduction of the brickwork.

The medium of the brickwork.

Of this man of the brickwork.

The medium of the brickwork.

Of the man of the brickwork.

The medium of the moles are forced, combust on the force and the montant of sir in the furnace, it would be to the moles amone as the furnace in the breast and at the treating of the moles are forced, combustion was to the world account for the mesce, it would be to the advantage of the smoles are forced, combustion was to of the smoles the boiler; the atmosphere.

There a constant flame has are of the accombustion was to of or on the most trem.

There a services with the total bester to the force from the force of the moles. A setting only the sach was a constituted by the force of the moles of the smoles of the smol It is well known that even in our best and most conomical known that even in our best and most conomical furnaces and boiler settings in the amounts wasted from different most settings. In the smouth even in out of settings a large percentage of heat that is not a yetems of settings. In the first in some settings the adouble what it is in others.

In discussing this and ject the first occuraters. In the first occurate the first occurate the smould be: How much heat must navoidably pass off, and second, how much actually should be they considered the smould be. How much heat must navoidably pass off, and second, how much actually the studies of the second of the first occurate the first passes off, and second, how much actually fact the studies of the smoult of the studies of the first that the smoult of the second of sooller with a good sharp words, the intense of a boiler with a good sharp the boiler are upgraved in the story common practice to put enoune of the boiler are story common practice, to put enoune a fact than the absorbing surface or sheets of a booler with a foot broader than the discussion of generating under the fact that the discussion of the fact that the one-third the longer, and though the story common practice to put enoune as a cocessive grate under boilers, in most case shell in an enoune of the that the discussion the stand than the start the smoler. This practice is infally and the start that the meat is generated. The same areas are seen to proporty only the same and distances the same and the same and distances the same and the same and distances the same same and the same and the same and the same and the same and the

our glove, tar tess totals the injuries of ages of preed out beyond.

Ozoux.—Ozone, according to the recent careful observations of Dr. Olesswaki, boils at a femperature of —106°C. This curious/anbeance—the nature of which was so long a mystery, and about which was so long a mystery, and about which see of those of our poblesces have been devised—is now becoming poblesces have been able to follow the devention of oxygen. Its spends a summarize the present state of recent research, we may in a few words canner and that of newer form of oxygen. Its spends a stome the present state of our knowledge.

Ozone is a denser form of oxygen. Its spends a farmer is a denser form of oxygen being 16, and that of bydrogen I, it is highly probable, and that of hydrogen I, it is lighly probable, the highly probable and extra the state of the property is 24, that of common oxygen being 16, denser form, and it is very unstable, dented it is noisenlies contain three similar oxygen of heat, and excitigs most powerful action on oxidizable materials. For some time past it is a power. In the composing with explosion and with evolution of heat, and excitigs a most powerful action on oxidizable materials. For some time past it is a power only be compared to the first spends only be compared to the first spends only be compared to the first oxygen can only be compared to the first oxygen to evaporate, and when heated the liquid began to evolute of the income of oxygen to only be compared to only be compared to only oxygen to evaporate, and when heated the liquid began to evolute, and when heated the liquid began to evolute of other ebuilition. It is a very dancer of oxygen in the ordinary stances to work with.—Lancer, tell also in former periods of the earth's existed encedents and expense expen

sures. Large vs. Small Boilers — High Pres-

The Use and Importance of a Proper The Obserod Importance of a Proport Water Chroulstion.

The economy of a boiler depends upon three things—the setting, the conductivity of the plates and the circulation. A poor circulation in a boiler is as equally detrimental to the confactal to the confactal to the feet that a poor circulation of the steam generated as a poor circulation of the blood in the human yastem confacton of the bood in the fact that a poor circulation of the steam confacton in a boiler a poor circulation in a pool of the feet and feet, hence they abould not a poor circulation in a boiler in the bold of circulation in the steam through the plates and convert it into steam produce equally detrimental results? It is through the plates and convert it into steam and it is another question for the heated water to ruse to the plates and convert it into steam and descend again to the bottom. There are cases where, in order to obtain a large capacity from amall boilers, circulation pumps are used asses where, in order to obtain a large capacity from an an active oirculation. The force aside the water in order to obtain a large capacity of the surface in order to obtain a large capacity from an an active oirculation. The force of the circulation is not very great, as it is morely brought about by the relative densities meetly brought about by the relative densities of the surface, and, upon discharging its steam, descended to be again reheated, hence we see that, as the currents are accelerated only by their difference in density, they are assily related.

The Government of the surface of a Bolter difference in density, they are assily related.

LATEGO VS, SIMSHI BOILOTS — HIRRI F168BUIGS.

In an instructive article on the above subject, the Locomotive recently remarked:

Valurally the first difficulty encountered in the construction of the boiler. It steam in the construction of the boiler, it steam in the construction of the boiler. It steam in the construction of the boiler. It steam in the construction of the boiler is the test in the sent of the boiler shall be sent the very special states built to earry the bigh pressure its factor of the boiler shall be sent the very the beat sent of the boiler shall be sent the very the beat sent the very the beat sent the very the beat sent the very the sent the very the sent the very the sent that the difficulty want the very the sent that the difficulty is sent the very the sent that the difficulty of the very the sent that the difficulty is sent the very the sent that the difficulty is sent that the difficulty of properly; there are sent on the very the sent that the difficulty is sent in the very of pressure that sent the sent to the very power developed, it is cheeper in first one; to the sit, a slightly greater degree of economy treet, sent be selved to boiler. The four small boilers or requires less space, less briefly carried.

For example, suppose 100-horse power is wanted, the same power, would required a sent boiler, the sent same properly.

For example, suppose 100-horse power is wanted, the two onld requires the suppose 100-horse power is wanted, we can get it by using greater degree of economy places this would one the same power, would required in the first case, and in many places this would one as a same parting it is died, be same power, would required in the first sate, and in many places this would one the same sent of the same of the large boiler, furnishing the same power, would required in the last three sines of the large select in the same of the large of the same select with the two case, and in many places the would could be required in the same three such marked, such same same an

The Setting of a Boller.

The Use and Importance of a Proper Water Circulation.

Boilser set of the set

WHAT IS FROG-SPITTLE?—The frotby substance which is often found on grass, and popularly known as "frog-spittle," says the Boston Journal of Ohemistry, has no connection with that animal. It is caused by a little insect which he is completely covered. To enable which he is completely covered. To enable mut to herethe he reaches out a pair of lege, which he is completely covered. To enable town, and afterward allows it to escape into down, and afterward allows it to escape into comp, the liquid. After awhile the numerous bubbles convert it completely into froth, or a substance convert it completely into froth, or a substance oriding and penicimian were found; the same percention were found; the same proposed for it is a lacobotoxine.

In a Chanonuc Worke,—Geologists have deciped, come of them 60 teel or more in length, during the reptile section 60 teel middle period in the earth's geological history, when mollarles and reptiles estained their cultimation and decipied, and when choice the first middle period in the earth's geological history, of the largest individuals that now exist in middle of Quartenary—is given by Owen.

\*\*Cligantic elephants of nearly twice the bulk of the largest individuals that now exist in middle period of their way town exist in manuals. Two-horned rhinoceroses, or at least manual, and Airtie, roamed here in herels, if the anticont forcests or wallowed in the swamps. The cient forcests or wallowed in the swamps. The laste show species, tored their way through the anticont forces or wallowed in the swamps. The laste shouly and with as tourdiable trakes as found aubartenes in the plains. There were also gigantic deer, wild borses and borses and boses, were then that that of Bengal, and another with ashermone that the for the sample of canines eight inches long. Troops of rapped canines eight inches long. Troops of repeated worker were sampled canines eight inches long. Troops of themselved the sample of the same prevent wolves and various smaller animals, down to bats, moles, rats and mice."

\*\*Wark I se Freod-Struzz Parles and pown to be specified to the force which is often found on grass, and pown at the same of the same

Holsonous Ptomasine in Milk,

H. Hirth in the Lancet gives the following:

H. H. Firth in the Lancet gives the following:

Ing. An epidemic of stracks of violent purging and vomiting among the soldiers in the Punjab and vomiting among the soldiers in the Punjab idea of the suspected milk was found to be of the suspected milk was found to be of the suspected milk was found to be odor; the weather at the same time weaver found to odor; the weather at the same time was very line by weakers in by district of the milk was coagulated, filtered; the filter of the milk was coagulated, filtered; the suspected in by district of the same time was very persential.

The Operation of sickly odor and pungent of the filter of the filter of the same orystalline residue of sickly odor and pungent of state was obtained. Given to months and beadened, oges in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a similar doge in 15 minutes. Milk tested in a milk were long which seems ground in a 15 minutes. Milk tested in the same sympton of the same or summon forms of only in the same sympton forms of only done of the same sympton forms of only done of the same sympton forms of the same sympton forms of only done of the same sympton of the same sympton of the same sympton of the same sympton of the same sy

Poisonous Ptomaine in Milk,

John Swinton, a labor advocate of some reputation at the Bast, recently gave an address in boston at the Bast, recently gave an address in Boston on the revolutionary forces of the standience, according to a report of the address in a Boston paper, prebended appreciation to the report before us, if true, he but, according to the report before us, if true, he must have dealt largely in incoherent talk about birs larges, must have beat largely in incoherent talk about birs larges, must have been found very difficult of application to the points which he assumed to illuminate. One of the forces which were to spin the seasons of application to the points which he assumed to illuminate. One of the forces which were in the constitution of the seasons in the statement of application to the true, he standing the statement is not to be disputed, but when he shides to it is not to be disputed, but when he shides to it facts that have been demonstrated time and disparsgingly as working to the destrinent of the working people. Though said disparsgingly as working people. The gutternipe's head becomes a known the clodhopper teach, he clodhopper is lost, when the gutternipe's head becomes a known the gutternipe's head becomes a known the clodhopper and it then mind he educated to the employment is raised in proportion to or degraded in itself, and it becomes so only because intelligence deen out or arger into its execution. Let the mind he educated to the employ-cause intelligence deen out arter into its execution. Let the mind he educated to the supply or degraded in itself, and it becomes so only because intelligence of a content of the employment is restained in the engage of the employment is restained in the engage of the engage of the engage of the content of the engage of the

Machinery and Labor.

hol and ether, and dried. In the cell wall, which was all that remained after this treatment, no cellulose was found; but it was mitroe in different appearance, yielding from 5.3 to 11.15 per cent of senous, yielding from 5.3 to 11.15 per cent of amount and different appearance, the different atages of serming to depend on the different atages of growth of the bacteris. No opinion is expensed as to the nature of this nitrogenous pressed as to the nature of this nitrogenous

CHEMICAL CONSTITUENTS OF BACTERIA—I.

Vincenzi, in Set. Physiol. Chem., has experience relating to Bacilius subilius.

A pure fluid was obtained by Roberts' method. The fluid was obtained by Roberts' methough were washed with water and 0.5 per cent sodies and by droxide solution, digested with attaining on the string in the solution, digested with attaining of the fluid particular strings of the fluid solution of the solution DIRECT AESORPTION OF NITROGEN.—Dancel.

Direct Aesorption of NITROGEN.—Berthewere, were placed in vessels of glazed earthenware, were placed in vessels of glazed earthenware, and in some cases were proceeded, in others example to the same of the

the state of the state of pales and the state of allotment was adopted in the company, and the state of allotment was adopted in the company, and the state of allotment was adopted in the company, and the state of allotment was adopted in the company, and the state of a state of allotment was adopted in the company, and the state of a state of

The Milling World gives the following facts, which will be of interest not only to all houses which will be of interest and confy to all houses were, but to flord manufacturers as well; to 285 five-cent losses, hasy pakers blond four bender as a well; to 285 five-cent losses, hasy pakers blond four bender, as two Minnesota springs and two of Others use only one grade of spring and two of Chers use only one grade of spring and two of malt, poratoes and hops, and this is extensively in order to male, potatoes and hops, and this is extensively in order to compressed yease. It is popularly supposed the sealth and the present yellow whiten their bread. Three is no necessity for the use of allow, and whiten their bread. Three is no necessity for the use of allow, but it is no tused in the trade. There are about a maker is no necessity for the use of allow, which it is no necessity for the secan sectle lease. On the case of allow, and of the bread in the order to one of the secan in the trade. This makes the serial makes the bread in the own to the trade as and chose the bread in the own to the trade as and since the bread in the own to the trade as the order to other crust thin and the bread in the own to the trade as the bread in the own to the trade as and posesses a function of a serial in use hord a such of serial or other crust thin and the bread in the own to the trade is another recent invention. It is make the bread in the own to the trade of larges the of the own. One very large bake the bread in the lowest of sorted in the season of serial or serial as a steam factory, it is stong to serial in use hered is extremely light and done, but the bread with calculation is an English one, but the bread with calculation is eated as the order in use hered in the serial order of the trade of any order or or order trade in use hered in the serial order order in use hered in the serial order order or order trade or order orde

Hope for Consumptives. GOOD MEALTH,

The French method of treating cases of consumption by a streated of the treating cases of consumption by seems of consumption by seems of the treatment of streating cases of consorted to the treatment of streatment of streament as follows:

"A large shear as streatment of streatment of streatment as follows:

"A large shear of streatment of streatment of streatment as follows:

"A large shear of streatment of streatment of streatment as follows:

"A large shear of streatment of streatment of streatment as follows:

"A large shear of streatment of streatment of streatment as follows:

"A large she

The S. F. Bulkein Diseases, from which where contained an investigate at the contained an investigate at the contained and investigate at the contained and investigate at the contained and the following extracts:

In 1976 there was a ourious outbreak of the following extracts:

In 1976 there was a ourious outbreak of the following extracts:

In 1976 there was a ourious outbreak of species, IV.

The doctor who had been called on underwing the following extracts:

In 1976 there was a corrain weel, that the circumstance that all the disease of which drew their waster there investigation and to consider the fact that the contains and the constant of the contains and in the character there investigation the coutbreak had been called on underwell which waster the well which waster the well which was made the fact that the within as about time, in a recent lecture before the captures the communication of London, stated that the fact that the contains a singly, sometimes in the common to all these outbreak had a fill these contains and it was this poolita, being common to all these indeath of the cases of illness—scarlet there of the contains and it was this poolita. The form the same source—that is not the control, sometimes in the common to all these only this, in the control of the contains and it was this poolita, been contained to a condition whith the may be and it was the common to all these forestold. Only, or all these households. On the cases of illness—carlet from the same of illness—carlet from the same source—that is apped; and intriber, it was shown that the control only the control of the cases due to be condented.

This extains a form the same of illness—carlet examination of circumstantial ever, as the control only the cases of illness—carlet ever, dipthered to a condition which the cases due to the cases due to the cases of the only think, in cape to an end, only of the cases of the carlet from the same day, the man to cases due to the cases of the c

identical in microscopical and in cultural characterical in microscopical and in cultural characterical in microscopical and in cultural character."

But Dr. Klein is not simply destructive. Milk is general article of food—in some cases of necessary food. If there are such dangers to necessary food. If there are such dangers for characteries is, he says, fortunately, a simple remedy in case of suspicion to abandon it altogether. There is, he says, cuttainty of the microbe of ordinary points, is perfectly sufficiently cestroy the vitality of the microbe of searles fever." The case cannot be said to be carlet fever." The case cannot be said to be searles fever." The case cannot be said to be searlet fever." The case cannot be said to be searlet fever." The case cannot be said to be searlet fever." The case cannot be said to be searlet for the microbe of than the interested speculations that are sometimes how in the interested speculations that are sometimes then in the interested speculations that are such than the interested speculations that some provided. The old belief ascribed saggment than the form in modern language into various discusses. There ought to be clearliness inside and outside in all communities.

The system of profit-sharing by employes is to be tried in a pew direction in this country. Mr. Ashley, president of the The Toleon, Ann Arbor to be tried in a pew direction in this country. Mr. Ashley, president of the Toleon, Ann Arbor can profite a president, the Toleon, Ann Arbor employes of the relative step at the president, are to become benediciaries after they president, year a dividend is declared each benediciary is to receive, in addition to his salary, a dividend on the mount of that salary the same as if he are to the salary, a dividend each president is declared each benediciary is were the owner of that salary the same as if he are owner of that salary he same as if he mounts of that salary he same as if he maple or note, he is to receive a certificate of naty so on the succession of the west of the to receive a certificate of the year preceding his classification of the wester of a loss of life in active of the total sum wife or legal representative is to receive a cincipar of the wester of a loss of life in active of the can be a similar can of the salary and the company's series and the salary of the restricted of the restricted of the wester of the restricted of the salary and the salary and the salary of the salary and the salary and the salary and salary and the salary ane

A NATIONAL ASSEMBLY OF IRON-WORKERS.—
A national assembly of iron-workers is proposed, with the approval of Mr. Powderly and his executive board. Notices have been sent On the organized from and steel workers of the United States, in which it is suggested that a national convention be held at Harrisburg, in the Mational hall, commencing June 4th,

BRICK-CLAY FROM UNDER THE HUDSON RIVER.—Rich brick-making clay, under the bed of the Hudson river at Haverstraw, is to dame, the surishe through the use of coffer dame, the surishe through having been principally exhausted. When the new plan is perfected, Haverstraw, it is promised, will lead all other places in the manufacture of bricks, all other places in the manufacture of bricks,

farming implements, machinery for cockon manufacture and mining. It is also said that there
is a large opening there for wood-working machinery, obiefly on account of the Mexican forests,
and superior timber of the Mexican forests.
The duty on barbed wire has recently been removed as an encouragement for farm improvemorets.

The people of Morthern Mexico, who are now so rapidly coming in contact with dusiness men from the United States, are fast taking on pro-gressive prodivities. They are introducing ferestive prodiving superference implements machinery for other means.

Mexico Becoming Progressive.

Sharing Profits With Employes.

moved as an encouragement for them improvement of the mining inforted was in the tast second, but the encouragement of the mining industry was recently passed, and at last accounts a full for the hands of the Fresident for his signature. From the date of the President for his signature. From the date of the President for his signature. From the date of the promulgation of this law coal mines of quickeliver, iron and all the mines of quickeliver, iron and all the contribution other than the stamp tax, and the contribution other than the stamp tax, and the contribution other than the stamp tax, and the contribution of gold and silver in the stamp tax, and the fir moder what name the same may be levited. For import duties and the mines and the mines and the mines and the cost of the products from and seasy offices shall be seen to the capture of the cost of extraction of the product so mather than the wall the cost of extraction, and shall never country and season of the graducts and include what here are not the stand of the coinage of the cost of extraction of the coinage of the cost of extraction of the coinage of the order to except of the coinage of the value of the product stand here. A subjected to but one tax, which shall be determed by the value of the product shall be determed by the value of the product stamp the coinage of the cost of extract, product or use of the mine or minist of extract, product or use of the mine or mill, or the product or use of the mine or mill, or the product or use of the mine or or the applied invested in mines or or the capital invested in mines or of the product or use of the mine or the spiral increase of effects and mills, and or the name of the capital invested, is positively that the product or use of the product or the or transfer of the capital invested, is positively that the product or the product of the capital invested, is positively that the product or the product of the product of the pro

the following the first process of assents, the following from the Glowing of corrected Monthly is of much lower the from the Glowing of corrected Monthly is of much lower the following or the

ment of the light of the light

As we have no hickory in this State and are growing many species of acacia, the following from the Carriage Monthly is of much local in-ternat.

Acada va. Hickory.

ment of a lower court in a case against a mer-

Judge Van Syckel, of the Court of New Jersey, has just filed an opinion in the Court of the Errora diesenting from the majority of the judges in bano in their affirmation of the judge. Liability of Mercantile Agencies.

USEFUL INFORMATION.

Lymotic Diseases,

been found. Much low-grade ore is exposed in all parts of the old upper levels.

YELLOW JACKET.—Are taking out soo tons of ore 3 dsy, which is daily being sent to the mills on the Carson river. A good deal of prospecting work is being done in all parts of the mine with very satisfactory results.

SIERRA MEVADA.—On the 520 level east crosscut.

No. 2 started from the main north lateral drift opposite wors crosscut. No. 9, was advanced 45 feet; totail length, 264 feet. It is still passing through porphyry.

phys. A street, The sun passing through porparative grade and sending to the bell because of the surface extracting and sending to the mills go tons of ore a day. A large amount of processing work is being done in the mills, and several promainer activated, and is on the mills and several promainer attanded, and is on the ground. In the promy of 15 men. A Westinghouse engine of 65-horse of 15 men. A Westinghouse engine of 65-horse mine are still vinning north on the 885 level. HAVWOOD.—The Thompson mill is running staded by the mine. Prospecting operations show an immense body of ore of a fine miling grade.

BALTHAORE.—The south crossent on the socumnismense body of ore of a fine miling grade.

JUSTICE.—About 500 tons of one baye accumulations are that it will open out to a width of eight or nine feet.

JUSTICE.—About 500 tons of one baye accumulations and the one-producing sections are booking well. Prospecting work is still being wignously prosecuted.

JUSTICE.—About 500 tons of one baye accumulations are supported by a drift ton a distance of the supported by a drift ton a distance of the mine has been opened by a drift ton a distance of the mine has been opened by a drift ton a distance of the mine has been opened by a drift ton a distance of the mine has been of performed by a drift ton a distance of the mine has been of performed by a drift ton a distance of the mine has been opened by a drift ton a distance of the wine for the control of the mine has been of the drift of the control of the mine has been of the drift of the control of the drift of the control of the control of the drift of the drift of the control of the drift of the d

BENTON.—On the 725 level the mine has been spended by a drift for a distance of 682 feet. Cross-below.

SCORPION.—The east drift from the 300 level Station has been extended so feet. The face of this cloud has been extended so feet. The face of this froundles have caused a temporary suspension of thou the state of the sand expension.

CHOLLAR.—Mork is in progress in the drifte sand crosscute on the several levels, with no special change to note.

CHOLLAR.—An east crosscut has been started on the year of the sand crosscutes on the several levels, with no special change to note.

NORTH OCCIDENTAL.—After the Fourth several men will be put on to work throughfule Occidental.

BEST AND BELCHER,—Owing to the mining disaster but little work has been done.

LADY WASHINGTON.—Still drifting north on the ANDES.—Are now running north from the west ossecut on the s40 level.

Aurora District.

MILL.—The Silver Hill mill is expected to start up about the took inst. The mill will num on ore from the took inst. The mill will num on ore from the Antelope mine. Representatives of the English Co. are expected at hourse every day. It is understood that a plan of working its property on its understood that a plan of working its property on its understood that a plan of working its property or its understood that a plan of working its property or the dump to be crushed. It is probable that it will be worked at its Silver Limber it work to company the silver Hill mill as soon as it completes its run on the ore tron the dump to be additional prospecting will be done in the mine; two men will be put to work to cut another body of ore supposed to exist in the mine. The company has posed to exist in the mine. The company has babundance of ore in sight in the mine ready to be taken out, but for lack of present reduction facilities the extraction of the ore worked to describe the extraction of the ore will be deferred.

THE GARFIELD MILL.—Walket Lake Bulletin, July 1: James Spiers, of the firm of Hinkley, Spiers & Hayes, proprietors of the Fulton Iron Works of San Francisco, came up from the bay last estection of the additional milling machinery at Gartield. The Fulton Works made it the big furnaces for the Mount Cory mill. The Garfield work will be pushed rapidly and the mill will be muning in about two mounts. Garffeld District.

Gold Run District,

THE DIGGINGS,—Sifusy State, July 1: The water has given out at the Gold Run placer mines to water has given out at the Gold Run placer mines to which Judge Bonnified and Paul Placon built a ditch last spring. The last work was done with a sluic, and the result was eight ounces of dust. The dust is very pure and brings \$18 are ounce in The dust is very pure and brings \$18 are ounce in the country pure and brings \$18 are ounce in the diggings and dired expect to get well paid for what they have expended.

Hawthorne District.

HRWChorne Dietrict.

WATER AT LAPANTA...—Entersides News, July 2: Last Thutsday, while driving a cut to accertain the declination of the Black Dyke, which is supposed to be the benging-wail of the famous Lapanta about as inch. It is the biggest strike yet made in Hawthorne district. The water was struck. The stream is should as inch. It is the biggest strike yet made in Hawthorne district. The water have being strike to be surface, J. A. Yetnington in Hawthorne district. The water has struck bus failed in M. Yetnington, at Carson, of the bus failed informed a New reporter thereof. Should the flow of water prove permanent and adecing a strike, and also informed a New reporter thereof. Should the flow of water prove permanent and adecing the flow of water prove permanent and adecided in the flow of water prove strike cust in the reduction of the district. Again we state that this of the flow of water prove strike ever made in the order of that district. Again we state that this order is the pest and largest surface set made in the county, and greatly interests us all.

DRE.—Belmont Courter, July 2: Fourteen tons of gold and aliver ore from the Illinois mine in Lodi district was shipped to Reno recently for reduction. This ore is said to be very nich. The Argent M. Co.'s property in Lodi, Mye county, has been sold to Newton Booth of Sacramento, Cal., and Altred Welsh of Dooth of Sacramento, Cal., and Altred July and March Dooth of Sacramento.

ONONDEGA.—Pioche Kecord, June 30: The work of sinking the incline of the Onondega mine, Jack-rabbit district, is being pushed as rapidly as possible. The lottom of the incline is looking favorably. The lottem of the incline is looking favorably. The lottem and the ore, assayed 48% ounces in silver and 28 per cent leaf. Six assays of the oresider picking out the ore. Assayed 48% ounces in silver and 28 per cent leaf. Six assays of the oresident picking out the oresident picking out the oresident picking out over 8s ounces, What is strange, Mr. average of over 8s ounces, What is strange, Mr. Jackrabbit District.

soo (set, and five drifts have been run on the different levels, the south drift on the 800-foot level being 650 (set in levels, the south drift on the 100-foot mill is a farst caser location and prefeted order, and the transmers of the south of the transmers of the south of th

PIKE CITY.—Mountain Massinger, July 2: Good milling quartz has been struck in the Gen. Grant milling quartz has been struck in the Gen. Grant much outside work being done. The Alaska Co. much outside work being done. The Alaska Co. mine is clear of water. The static sour rich ore. The mount is working 95 men, and is getting, out rich ore. The sand the 40-stamp mill is running night and day, on the factor of the consigence superintendent, is doing all has a sand of the factor of the company. Sierra.

Терата.

THE CHROME MINE,—Red Bluff People's Cause,

July 3: Three rons of the product of the Chrome
mine near Morgan Springs have been shipped below
to be tested. Parties who were contemplating building a railroad from this place to the mine were bere
gas a railroad from this place to the mine were bere
mine and the proposed route of the railway. It is
said that after the Chrome product is tested, if the
mine and the proposed route of the railway.

It is
said that after the Chrome product is tested, if the
mine and the mines developed, if the
report is favorable, work will be at once commenced
on the new road and the mines developed.

On the new road and the mines developed,

PRU MINES.—Los Angeles Times, July 4;

There is a modest little mining district lying in the northeast corner of Ventura county, and adjoining less known. It is called the Piru Mining district, our own, of which little base peen said, and much and complesses as are as of so equate miles. One of the calma frameses, known as the Exchange, comprises a and comprises as are as of so equate miles. One of the claim a tunnel ago feet, at a depth of 300 feet. At the southerly end of the claim a tunnel ago feet, at the couplerly end of the claim a tunnel ago feet. At the southerly end of the claim a tunnel ago feet. At the southerly end of the claim a tunnel ago feet. At the southerly end of the claim a tunnel ago feet. At the southerly end of the claim at unnel ago feet. A feet in sight, The ore is a black sulphurer without surking the branging-wall, grings be body of ore of 35 feet in sight. The ore is a black sulphurer without surking the branging-wall so they proceeds, as the word of the wall tunnel above alluded to, northerly from the main tunnel above alluded to, northerly from the main tunnel above alluded to, ore the end of the contemplation ore, the extent of which, of course, cannot be determined, A so-stamp mill is now in contemplation.

Washoe District.

COM. CALIPORNIA.—AND VIGENIA.—Enterprise, July 2: Operations in the mine, as may well be supposed, have been greatly interfered with by the late mining disaster, buill men are kept at work at leading mining disaster, buill men are kept at work at leading points, and a good deal of ore is being extracted, or or of a very fine quality is showing points and one of severy fine classified from the or a severy fine classified from the the Los of a very fine quality is showing in an upraise started on the West side of the old stopes, an upraise started on the west side of the old stopes, to let up the Los of the classified Virginia shalt, tago level out the the Consolidated Virginia shalt, as and found the speered the second bulkfhead. On the too level have opered the second bulkfhead on the too level have opered the second bulkfhead of all is found burned alsek as pirch. Though much charted the speece within where the fire so long made since are that men will soon be at work in all parts to the old bulkfheaded section.

HALE AND MORENGES—On the 700 level the control of the old suck and the the classified section.

parts of the old bulkheaded section.

HALE AND MORGNSS.—On the 900 evel the north drift has been extended 60 feet, and the south drift has been extended 60 feet, and the south drift has been extended 60 feet, and the south drift has been advanced 28 feet, its length now being two fives of the top of level Mo. 1 exast cross-to the state of the south of th

gravel is struck in the tunnel, it will be wonderfully strange. Some of the old bedrock in the claims on the means and the means and the mean discharged, all on account of a disagreement among the directors of the corporation.

Placer.

Placer.

Juna Hill.—Cor. Placer Hereld. July 2: Our jown Hill.—Cor. Placer.

the directors of the corporation.

The control of the corporation.

IOWA HILL.—Cor. Placer Herald, July 3: Our mines are all looking as well as could be expected. I hear the Water brothers are having about the same lines are all lookings as well as could be expected. I hear the Water brothers are having about the same bac caused one filled eathwity among the owners of the country among the owners of ground up the divide, and rumors of sales and bonds ground up the divide, and rumors of sales and bonds are flower as the foreign and the country are as the foreign as are flower to Tabanca to Tabanc

the other day that the gravet was very good. Altobach's Blue Wing is atill being profiled which the other day that it pays is not made public. Mr. Art CALICO.—Cor. Ontario Accord, July 1: Among the principal mines are the Carfield the Graffeld the Gamena of the principal mines are the Carfield the because the what is the Waterhoe, Odessa, Sue, Blackfoot, Individually well of the Waterhoe in the Waterhoe in the worked are the Waterhoe in the water being worked are the Waterhoe in the worked are the work water house in the worked water work at Calionais, the ledge of one being 15 to 40 feet of manue in South and the water work in the bear work in the same company at California, the ledge of one being 15 to 40 feet of Calionais, the ledge of one being 15 to 40 feet of Calionais, the ledge of one being 15 to 40 feet of Calionais, the Baggett, 5 stamps, the Ore Grande Co.'s at Calion or stamps; the Ore Grande Co.'s at Calion or stamps; the Ore Grande Co.'s at Calion or stamps; the Ore Grande Co.'s stamps in the same company has at Calion, to stamps; the Baggett, 5 stamps, the off ore Mining and Milling Co.'s at Daggett, 5 stamps in the Manuel of Daliona of the same desire to publish mining and Mining Co.'s at Daggett, 5 stamps or their completion of the same desire to publish mining outputs as stand and the mines. The amines one per monthy is not casely to accretish, and of the linguage outputs as shipped monthy is not casely to accretish and string the same desire to publish mining outputs as the methodory of Souries.

Ban Diego.

Ban Diego.

Water is plenging in the right outputs as a deceived in the Hemete value, which will be seeded to the output the same desire to publish mining output seeding of the same desire to more of being output as and in the methodory of Souries.

Ban Diego.

Ban Diego.

Water is plenging the water is pl

ORIDOM.

THE EVERLASTING MINE,—CEITER, July 2: About a mile in a southwesterly direction from San Andreas is sinated a mine, the patented name of white is the selected a mine, the patented name of white is the selected a mine, the patented name of white is the selected a mine, the patented name of a southwesterly direction to select the forest selected and it others. The mine is undoubtedly on the mother lode, the rock being identical in character with the rock of the Cown mine. A start of 300 fets in depth was selected from the mine is undoubtedly on the mother lode, the rock eith of the company, and at several years ago, by a Stockton company, and at pended on the mine. The results have not been expedded on the mine. The results have not been expedded on the mine. The secult has the was exceedingly rich, place. It had a banging-wall, but no sign of a footners as many and an analyse of a footner of the other of the other of the other of the officer one time and another as to would prospect for the feach feed. They manded self-the woods of the officer one time and another as to would prospect for the feed. They manded self-the woods of the officer one time and another as to would prospect for the feed. They had been hunting for for years, a well-desting of a footnet one time and bis son commenced the sink. They immediately found rich quarts, and the rook is of good quality. To enable them to be rewarded, A shaft is anow as feet deep, and the rook is of good quality. To enable them to be reached last one to be a southernessed last and crushing was commenced last one to be a south of the results has better now than ever.

Montageney. when the equal stances by F. Walker, F. W. Farker, and H. Seymore.

Altegrate Awtorus.—Wegoliations are in progress and H. Seymore.

Altegrate Awtorus.—Wegoliations are in progress for the sale of the sale of the sale of the effected. At the consistent of sale bring effected. At the discount of the sale bring effected. At the discount of the sale bring the sale print count of Sentence of the cleaning up is progressing. It will take nearly two months to finish the work. Gideon Devore is elecaning up is progressing. It will take nearly two months to finish the work. Gideon Devore is elecaning up its pydraulic claim near the cleaning up is progressing. It will be the last the decision of the bas to days to make the cleaning. It is the species of the desired week to satisfy a judgment mining in that volume, and contained was pure to the contained was progressing to the contained was progressing to the contained was progressing to the contained was been satisfied. The New London has finished by E. Leverge, I the West of the company and the contained with the other claims against the company against one of the desired its finished dividend, and has now paid \$5,000,000,000.

The new shalf is being put down as rapidly as possition of the coad froming the bristing was declared in finish dividend, and has now paid \$5,000,000.

The new shalf is being put down as rapidly as possition of the other depth of the new office in the coad from the site of the county of the west and the other declared to the coad from ting the bristing was possition. All y 3:

The new of open the task of though vernilation in the west with of puring the bristing was rapidly as possition of the other depth of the new office of the form of the county of the work of the progression shall be a so at a so afford thorough vernilation. In the week, when the sates will be sated will be sated will be sated of the ordination in the week, when the water will be very or one to the effect of puring the sate was well when the water will be well and it in every

Pumae.

Power as yet, little more;

Power as yet, little more as yet, little more;

Power was yet be leaden yet where yet, little more;

Power was yet be leaden yet on the little more;

Power was yet be leaden yet on the little more;

Power was yet yet before yet, little more;

Power was yet with yet, and we was yet in the more;

Power was yet yet before yet, little more;

Power was yet yet, little with yet, and yet, a Incoosar, and are conductally mining down a rich fand.

Babashs.

Gold,—Redding Fives Press, July 2: Report comes that Caron & Snyder of Squaw creek have comes that Caron & Snyder of Squaw creek have like to the river pression and Mr. Fernback, representing the rich mine at Mirened the week from a visit to the rich state to the rich state of the week from a visit to the rich and the rich mine at Mirened the week from a visit to the rich and the rich mine at Mirened the week from a visit to the rich and the rich and the rich mine at Mirened the same of the rich and rich and

MINING BUMMARY.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

CALIFORNIA.

GOLD MINES.—Cor. Salinas Index, July 3: We GOLD MINES.—Cor. Salinas Index, July 3: We bave a boom in gold-quart mining, eight miles could be seen to the four or tumber four or five miles or tumber four or five miles and in lime or tumber four or five miles and a boom in the miles or the or Monierey county, three quarts lode, situated about nine miles from the ocean, and nearly 3000 feet above in most the summit of the mountain, seems to prove miles from the ocean, and nearly 3000 feet above in the writer can learn, is proving to be a well-defined, on the writer can learn, is proving to be a well-defined on the writer can learn, is a more subject. Other particles in the writer the proving to be a well-defined, the subject of the summit of the mountain or the writer to be a well-defined. The subject is the writer of the subject of the s

Calaveras.

MOORE.—Amador Ledger, July 3: This promising property, we regret to announce, has once more come to a standarill. The pump and other machinary and all the men laid off. This indicates an indefinite period of identees. The only reasonable the differences between the stockholders, the differences between the stockholders.

the differences between the sucknotuers.

Live OAR.—A cleanup of the two-stamp mill operating on this dain, near Stony Creek, was made obesided over \$450 per form; nearly double the average of previous runs. W. Harrist eccently sold his interest to Ft, Walker. The shalf is down over too feet and the ore hody at the bortone is two feet thick, and much better quality than reserre the surface, where they have been better quality than owned in equal shares by F. Walker, F. W. Parker, owned in equal shares by F. Walker, F. W. Parker, Alsey and H. Seymore.

Amador.

OFEGON.

HATU

of sciratily in all of the mining distincts.

Vincontiny in all of the mining distincts.

Vincontiny in all of the works.—Mountain Ecolo, July 23.

Vincontiny in all of the Works.—Mountain Ecolo, due Reserve aime at Carson Hill, intends erecting chlorises serve aime at Carson Hill, intends erecting chlorises across the material to the mining interest so this accounts of the Mountain and business men could not would add materially to the mining interest of this accounts of the material to the mining and business men could not be mining and business men could not be mining and business men could not be mining to the mountain and possible chloring.

All: Buckminister in his Golors to establish chloring.

All: Buckminister in his Golors to establish chloring.

All: Buckminister in his Golors to establish chloring.

Lixiviation works is astonishing every one. Altining to men who have personal knowledge of the endless now that we be expected.

Lixiviation works is astonishing every one. Altining to the Black innige are attracting more successed of or in true freque with last ureas our of the Black innige and one shall have become a substant who can be the endless and business; that the endless are during the must success. They know that the lixit camp is cunting the first uning the must success. They know that the floroughly from beginning to end. The endless and business; that the floroughly from beginning to end. The leaching process, which so many ware inclined to disbelieve and securing its work in a manner exceeding the expected, income of that dependence of the endless and a speaks volumes for froi. Henry A. Schmidt, work in a manner exceeding the expected, income of that dependence of the endless and a speaks volumes for froi. Henry A. Schmidt, is work in a manner exceeding the extention of the endless and a secure of the endless of excellent during the endless and a secure with case of the endless of the endless of excellent during the endless and a secure of the endless of excellent during the endless of exc

Care's taken for the control of the

IDAHO.

.ANATNOM

MONTANA.

THE METURE.—Butte Mirer, June 30: The cool-foot level of the Nepture that was footded not be gained and eveloped of the Nepture that was footded not long since is now entirely drained, and developed of the corful drift referred by been continued. On the corful drift referred to the continuation of the good of the foot of the corful drained of the foot of the cool is the too the state. The chuick, and the lowest assist is remarkably fide. On the rap-foot level there is of that level and the work of development of that level cool fide that the second the work of development of that level cool fide that the station of that level beging the saction at Meaderville has been cut, and drifts run both east and west. Stepen cut, and drifts run both east and west. Stepen cut, and drifts run both east and west. Stepen cut, and drifts run both east and west. Stepen cut, and drifts run hout as and west. Stepen cut, and drifts run both east and west. Stepen cut, and drifts run hout east and west. Stepen cut, and drifts run hout on that cate only certained, though they are not in far enough to destremate, though they are not in far enough to destremate, though they are not in far enough to destremate, though they are not in far enough to destremate in lead matter that looks lavorable. The continues in lead matter that looks lavorable. The dount of manual drifts in the leader of the Anaconda were busy all day letting down turbers.

WE COL CAMP.—Arizona Enterprise, July 2: D.

W. Cummings says the ore body on Chillson & Hinds' claim is remarkable for its extent and richness: It is thought probable that arrangements will be made to have too tons of ore worked at the Vekol mill, after awhile, which will net a sum sulfocted to erect awhile, which will net a sum sulfocted for made to developments also shows a future of phonomental propability. The mine belonging to Supt. Day, adpoining the claim of Messrs. Chillson & Hinds, pioning the claim of Messrs. Chillson & Hinds, also shows exceedingly high-grade ore in flattering the original produce half a dozen more mines like the famous Vekol.

Vekol.

AT HAMILTON.—White Pine Meas, July 2: The finest The paying mining property in our midst, for the labor being performed at present, is that of Austin Jacobson and his partner, Gue Simonson, who are acadily making more than wages, besides improve ing their property. They have got a first-class ling and know it. The Stafford mine shows no material change, but is reported as looking well.

feet.

Union Districts.

PROGRESSING.—Belmont Coursies, July 2: Work is progressing finely in the various raines in Union Districts.

PROGRESSING.—Belmont Coursies, July 2: Work is progressing finely in the various raines in Union district. Messre, Stewart & Phoneny of Obio Dave sent enough money to pay off all debts due by the Knickerbocker Company, and the Knickerbocker Company, and the Knickerbocker Company, and Storm Kring mines. Give town the Berlin and Storm Kring mines, sand he feels confident that these mines will step or into not error the Berlin, Storm Kring and other mines, and the owners are shipping silver bull-town the Berlin, Storm Kring and other mines, and the owners are shipping silver bull-town the Berlin, Storm Kring and other mines, and the owners are shipping silver bull-town the Berlin, Storm Kring and the owners are shipping silver bull-town tegularly.

An Marke Place Pine Districts.

MORTH BELLE ISLE.—The sinking of the shaft and cutting out of the station on the 400-foot level and cutting out of the station on the 400-foot level will be pushed forward as rapidly as possible. A portion of the machinery has arrived and good progress will be made in erecting the new works.

NAVAJO.—Everything in and about the pump station has been completed, and the pumps do the work easily in ten hours. Work underground will have to be suspended for about ten days, while the shaft is being teinhered from the surface down yo feet.

Unlon Dietrict.

Intow or water.

DiANA,—Crosseut west soo-foot level has made good progress.

Drift north from east crosseut, same vein, which looks tavorable, and the over has continued to improve in quantity and quality.

MEVADA QUEEN, —The shaft-house has been completed and shaft finished to the 352-foot level. All the holsting is now being done through the main abnaft.

silver.

GRAND PRIZE.—Resumed work in face of south crosscut from west 300 north lateral drift. Face is no hard porphyry, showing small seams of quarts.

COMMINGWIERLITH.—Northwest grangway, 300-foot level, has been extended at feet, exposing some very flow of water.

The north of the east side, from which there is quite a flow of water.

nines, Photoh District.

Exeming, Photoh Districts, worked over go to no on on on the dump and prenty more in signt in the leaching worked over go to not of 15-outsects of the Godbe bletcher; worked over go to not of 15-outsec sercentings during the months of April and May. The sercentings worked ever to destroy of 15-outsec outsec of 15-outsec of 15-outsec outsec of 15-outsec outsec of 15-outsec outsec outsec of 15-outsec outsec outsec of 15-outsec outsec outsec outsec outsec outsec outsec outsecoutsec outsecoutsec outsect of 15-outsecoutsec outsecoutsec outsect outsect outsecoutsec outsect outsect outsect outsect outsecoutsec outsect outsect outsect outsecoutsec outsect outse

THE GUMN GROUP.—Wood River Times, July 3: Since recuming work in the lower tunnel of the Jumbo, a length of 15 feet has been added to the duffit. The vein shows fully seven feet in width-of which from 6 to 14 inches assay from 5too to of which from 6 to 14 inches assay from 5too to of the tunnel, but not settled selecting the rich stream instes, and an average taken clear across the breast in the remaining six feet of the ledge gold predominates, and an average taken clear across the breast of the tunnel (but not including the trich stream ing steadily, putting through to to 15 tons per day; but no general cleanup having been made, results and to be stated.

GENEVA,—A shaft has been sunk on this mine 60 feet, and the ore ledge is four feet in width. Assays have been made from time to time which run about its owners. Murkensohen & bralley are its owners.

DALY PLACER CLAIM.—The placer claim of the Daly Bros, is now being worked steadily. They are laking out about \$15 per day to the man. They have four men at work and expect to do better as soon as their new dirch is completed which will give them plenty of water.

LADY VINCENT.—This mine is the property of the present they have a torce of four men as work and a property of the present they have a torce of four men the property of the present they have a torce of four men they bave accommodations for them.

MENTONE.—Buttle Mirrer, June 301. The first ball of the present year cylinders and developed to the countried of the present of the present were the countried or the countried or the countried of the present more and the countried or the countr NEW MEXICO.

SILVER CREEK.—Bedrock Demand, June 37; Speaking of the Silver Creek district, Mr. T. R., Bentley said: Tail, Kidgeway & Skelton bave a lesse on tunnel No. 3, of the California, and are taking out a most excellent quality of high-grade wide, ten inches to a foot of which works \$200 per 100. On the lowntranspace to a foot of which works \$200 per 100. On the lower tunnel, Mr. C. Probasco and A. H. Hennington, owners of the Hennington, owners of the Silver King, on Craeker creek, and a saeking, preparatory to short in mell No. 2; the average in grade than that tound in tunnel No. 2; the average selecting, preparatory to the henning that the selecting preparatory of carbon capital selecting that the selecting of the Silver King, on Craeker creek, and the Silver King, on Craeker creek and will ship all summer. The average of the Silver King, on Craeker creek, and will ship all summer. The average of the Silver King, on the Silver Creek, and will ship all summer. The average of the Silver Creek, Clear Creek, so over 51s in gold and sulphruser. This average in the Interpretation of the John Day raver. It is on the creek is over 51s in the Craeker of the Silver Creek. Clear creek about 16 miles roan the California, Creek, and on the Silver Creek. Baker Co, and 42 miles from Baker Thy Grahem of the Silver Creek. Baker Co, and 42 miles from Baker the Gold-derind work 51c9 of the John Day raver. It is on the creek baker and seed by Cleaver, Tabor & Co, are the lucky owners of the Amazon, Vulvon and Bisine. On the constitution of an and bisine. On the standard seeker, Creek Amazon, Vulvon and Bisine. On the sail located on one bill. A road is now being the to creak the creek. Cre The same prities above who are interviews and many weeks are prities above who are interversed in the El Dorado, also own the Mora, and it is also a gold claim. They have a shaft down 25 feet and a 2%-foot ledge of gold-bearing took.

THE OCOREKA of Silver Hill was worked last year and condeteable good paying one was taken out. It has just been teased by a Butte company, who will proceed to develop it at once.

PYKENEES.—This company is putting on a larger town out, it has just been to easies to enter on the ore from their mine which continues to give on the orest from their mine which continues to give on the core from their mine which continues to give one assistation, and that has been sunk on this casays sport ledge which claim foo feet. The to the one is always and the continues to give assays so in gold to the ton. Messrs, Sternan & El Dokado.—A shaft has been sunk on this flow one is silver and assays about 75 ounces.

REBATE.—This wife and assays about 75 ounces.

REBATE.—The ore is silver and assays about 75 ounces.

It is owneed by Chas, Pryor and Mr. Miller.

With a full lone.

NOTHERN CROSS. - This mine is quite well known this district as a good property. Forty tons of was recently taken out and was recently taken out and was recently taken out. The average was \$13 per to the same of the same o

well under way.

SLEVER REEE.—This property, which came so nearly being sold to Salt Lake parties last year for body of ore has been struck which is claimed by about of the frame ever. A new body of ore has been struck which is claimed by sme expert to be the true facure vein, and he stakes that the stakes that the should be successful to be the true facure win, and he stakes that this last surke makes it the most valuable property about the lakes. The boys expect to commence the lake will permit.

ONTARIO.—The Ontario is a comparatively new formit in the stakes high in silver and earlies considerable obestion, but it as one the ledge. The vein is unusually promisionally permit.

Eddo.

DALARY PLACER CLAIM.—The placer claim of the Like will permit the lake with the lake that the late of the late of

but no general cleanup having been made, results and the machine of the machine of the machine of the machine of the machiner but as a short distance, will be worked this summer by a short distance, will be worked this summer by a short distance, will be worked this summer by a short distance, will be worked this summer by a short distance, will be company. All the machinery necessary back, and the work of the state o

MOHAVE COUNTY.—Miney, July 2: The American Pileg bays had 65 sacks of one worked lear week, weighing 4795 pounds. The ore sampled 543 ounces in silver, with to per cent sine, and neuted them a filtle over 5 tooo. This is the result of four men's work for so days. The sampling works have had work for one properly in this week, all they can do to work the ore brought in this week, all they can do to work the ore brought in this week, and may have to work the ore brought in this week, so may have to work the ore brought in this week, and may have to work the ore brought in this week, so we have the control of the Cupel mine bad a carload a carload and the control of the cupel mine bad as carload and the control of the cupel mine bad as carload and an earload an earload an earload and an earload an earload an earload and an

#### COMPRESSED AIR and WATER POWER MACHINERY.

FIRTH, 18 and 20 Fremont St., San Francisco.



200 Sold on this Cosst. Has less repairs than any other Drill. NATIONAL ROCK DRILL.

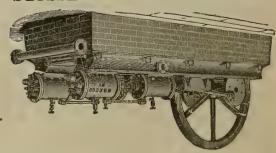


All wrought from Mogears, no breakage. One horse wall easily unalle root of a depter of a depter of 5806, giving entire eatisfaction to the prospector. Price, complete, \$200. 150 sold on this Coast. WINEBS, HOBSE MHIW'

EFIZEE-LUCOP





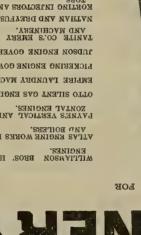


SINGLE OR DUPLEX, STEAM OR BELT POWER. 62 Sold on the Pacific Coast. NATIONAL AIR COMPRESSORS. MILLS, PUMPING AND HOISTING.

IMPORTERS AND DEALERS IN ALL CLASES OF Cor, Fremont and Mission Sts., San Francisco, Cal.

# YABNIHDAW

SOLE AGENTS FOR



DISSTON'S CIRCULAR SAWS, TANITE CO.'S EMERY WHEELS 2DDSON ENGINE GOVERNORS, EMPIRE LAUNDRY MACHINERY. OLLO SIFENT GAS ENGINES. SOUTAL ENGINES, PAYNE'S VERTICAL AND HORI-ATLAS ENGINE WORKS ENGINES ENGINES' BEOS, HOIZLING

Korting injectors and ejec-NATHAN AND DREYFUS OILERS.

NEW YORK BELTING AND PACK-

H. W. JOHNS' ASBESTOS PACKrene vad bodler saw mills

YACHT ENGINES.

## **ENCINES** and

FROM 2 TO 100 H. P., ALWAYS IN STOCK

OIFS LUBRICATING DNA SUPPLIES שורר



IRON CASTINGS of all descriptions.

and Salivation. Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

a most perfect appliance for people engaged in alting, Dry Crushing, Guano Works, clearly Dry Crushing, Guano Works, clearly et Miller, Dry Crushing, and all other competions to the competions of the competions

AND RAILROAD CASTINGS.

HOLLOWAY FIRE EXTINGUISH-BRADLEY CUSHIONED HAMMERS.
MASSEY'S STEAM HAMMERS.
UNIVERSE BOLT CUTTERS.

BEVIEWED WILLING MACHINES.

BLAKES IMPROVED STEAM

CHINISLS, LOOFS. NEW HYNEN WYNDE,G CO',S WY-MACHINERY, WOODWORKING

J. A. PAY & CO.'S WOODWORKING MACHINERY.

BICKEOED, S SOMER DEIFTS' BEWENT & SON'S MACHINISTS

TURBINE WATER WHEELS.

SHIMER MATCHER HEADS.

STURTEVANT BLOWERS

EERIN BVND SVM BLADES. WEBBER CENTRIFUGAL PUMPS.

MHEELS CHILLED CAR

THE RUSSELL PROCESS COMP'Y, San Francisco Cordage Factory.

HOOKER & LAWRENCE, Gen'l Agents,

THE FRISBEE-LUCOP MILL CO.,

Any method of amalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh dry, and from 3000 to 6000 pounds whet.

All wearing parts essily and cheaply replaced, May be seen in operation at the New York Metallurgical Works, 104 and 106 Weshington St., and Pacific Iron Works, San Francisco. Certificates as to performance of the Mills, and any information required, furnished on applicables as to performance of the Mills, and any information required, furnished on application.

ness in a rapid and economical manner.

other Mineral Substance to any degree of fine-

Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

ROLLER

Constantly on hand a full assortment of Manlla Hope, also, tope, Tarred Manlla Rope, Hay Bope, Whal Line, efo., etc.

Extra sizes and lengths made to order on short notice

TUBBS & OO.

611 and 613 Front St., San Francisco.

NEM YORK,

29 & 31 Spear St., San Francisco. Saw-Mill Machinery Builders,

STEARNS M'F'G CO.,

Manufactured Especially for the Pacific Coast Trade, with FRICTION BRAEE, CLUTOH, Etc., for Mining HOISTS,

BEVERSING ENGINES.

New Double Cylinder

**CONNINCHAM'S** 

Office, 145 Broadway, cor. Liberty St.,

GENTRIFUGAL

ROOM TOOR. NEW YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President.

MEDAL AWARDED, MECHANICS' FAIR.

OCCIDENTAL FOUNDRY, 137 First 5t., San Francisco, Cal. OHVS' E' STEIGEE.

## Metallurgy and Ores.

## SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office. **COLD AND SILVER REFINERY** 

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE,

LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

Under Chamberlin Patent.

## JOHN TAYLOR & CO.,

VND WIFF SUPPLIES, ASSAYERS' MATERIALS, MINE

CHEMICYT VLFSEMVEE VAD CHEMICYTE' EL

University of the Street, - San Fr. We would call the strends of Assayors, withing Companibation, Milling Companies, William Companies, Furnaces, Mulfill stook of Balances, Furnaces, Mulfill sheet, Services, Furnaces, Mulfill Sheet, Sordiffers, etc., Incidents, also, a full President Services, and Chamiltonia.

## Nevada Metallurgical Works.

Wear First and Market Streets, S. F. NO. 28 STEVENSON STREET,

Orea Sampled, Отев worked by any Process,

Assaying in all its Branches, Assaying in all its Branches, Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications furnished for the most suitable Process for Working Ores, a Special attention paid to Examinations of Mines.

Mines; Plans and Reports furnished.

C. A. LUCKHARDT & CO., (Formerly Hubn & Luckhardt, )

Cining Engineers and Metallurgists.

## METALLURGICAL

wing and Analysis of Ores, Minerals and Waters, Stramined and Reported on. Treating Ores by in

G. KUSTEL & OO.,



At the series of the series of

For Sale by all druggista.

#### WINERS COLD

Quartz, Gravel and Placer Mines!

## Silver-Plated AMALGAMATING

LECCEPS KNOMN LOE SVAING GOLD.

BYAE LECCESE WOOL ECONOMICS! VND SOCCESSED!

Fifteen Medals Awarded.

Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

653 and 656 MISSION ST., SAN FRANCISCO, CAL.
E. G. DENNISTON, Proprietor.

FRASER & CHALMERS STURTEVANT MILL. MOTICE,—My Silver-Piated Plates are well known and us

QUARTZ MILL. Hantington Centrifugal

SEND FOR CATALOGUE

JIGS and TROMMELS.

COBNISH BOFFS'

ENCINES AND BOILERS.

**BOMPING** MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

HOISTING

ENCINEZ

HALLIDIE'S

MIKE KODE

TRAMWAYS.

MEXICO OFFICE: No. 11 Oalle de Juarez, Obibuabua, Mexico. DENVER OFFICE:
No. 248 Bighteenth Street, Denver, Colorado.

UTAH OFFICE-SALT LAKE OITY, UTAH.

GENERAL OFFICE AND WORKS: Fulton and Union Streets, Chicago, III.

'Samna

MACHINERY,

ing smelting works

-bael ni noitareqo ni al

This Mill as a Crusher and Pul-veriver is without rival.

CORNIZA

ENCINEZ

NEW YORK OFFICE:
ROOM 48, No. 2 Well Street.

# JAMES LEFFEL'S

# leedW reteW enidauT zainiM

These Wheels are designed for all purposes where limited quantities of waster and high bacad are unliked, and the every arranged to give more power us transmitted direct to abating by belts, dispensing with gearing. Estimates furnished on application for wheels specially built and adapted in Estimates furnished on application for wheels specially built and adapted in capacity to suit any particular case.

Estimates furnished on application for wheels specially built and adapted in construction, as well as the ordinary vertical Turbines for Wooden Pentsches and in Iron Globe Cases, free of cost, by applying to the manufacturers.

1AMES LEFFEL & CO.,

or 110 Liberty St., New York.

Springfield, Ohio,

FRASER & CHALMERS, General Agents, Col.
Chicago, III., and Denver, Col.

PARKE & LACY, General Agents, San Francisco, Cal.

THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Industrial Publishers. Booksellers, Booksellers, Band Dres Received on Consignment, Sampled, Assayed, and Disposed importers,

> ASSAYERS, CHEMISTS, ETC. WINEBALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

HENRY CAREY BAIRD & CO.,

.A .E .U .Ba talnqlelphia, Pa., U. S. A.

#### San Francisco Metal Market,

\$g · @ g ****	Armagosa
8 00 72 ****	CharcoalBorax—San Bernardino
94 9 @ 97 9 ****	Charcoal
09 9 @ 92 9 ****	TINFLATE-Coke
≱I @ 01	Maylor & Co
9 @ 6 ****	Machinery
9 00ft	Plow
- @ 8 ····	Black Diamond, ordinary sizes
32 0 31	STREL—English, fb.
- 60 88	Hasks, old
- 50 do I	Flasks, new went sakely
- 6 00 0k	Chined, do
- 6 08 8	Chilled, do
- @ 00 2	Buck, # bag.
— 8 @ — — 8 80 @ — — 9 00 2	Sheet.
60 8	Sheet
	Ber
5 00 @ 5 124	LEAD-Pig.
18 (9) 61	Fire Box Sheets
181 @fai	Ingot
IS 60 61	Bolt
10 @ 01	COPPER—
- @ 00 0E	Shotts, No. I
- 80 00 22	Olay Lane White.
03 82 00 623 50	Output out and most to the
00 623 00 12	Oregon Pig, ton.
00 0830 00	American core, 140, 1, 50n
09 980 - ***	Eglinton, ton.
06 829	IRON-Glengarnock ton
- 60 16	Autimony-French Star
T, July 7, 1887.	
	WHOLESALE,

#### New York Metal Market.

WOLF IN	944	moay	figur	hu		adt at mriwollot adm
					*D:	— блісквігуве—53@54
						LEAD-\$4.60@4.62å.
						ARON-NO. 1, \$22,00.
					*(	COPPER-LAKE-\$10.00
						BORAX-54@64c.
					'ZO JE	BAR, SILVER-95%c po
						Mew York prices:
Smann	OT DE	TR 2415	TEO P .	Cine	Dagger	Pantany andergarar

Workship of the most place of the process of the control of the co

#### Anderson Springs.

About these Springs a well-known journalist writes as follows:

Anour mess opinings a went-known journaines writes as follows:

Anderson Springs are second to none in America as follows:

They are to us the most beautifully situated, best shaded, romantic and picturesquely surrounded of all freelyings and expensively state to the first state of the stat

recuperation, with reasonance recentainty, cichility, bure hot and cold water, and hot and steam sultered bound as are feed to all greats.

The board is exceptionally good, and the whole establishment is honestly and faithfully conducted, its a homelike manner, wholesome and gratifying to its all great number and deserving class of visitors.

A large collection of cleanly kept cottages concommodations for many guests.

A harge collection of cleanly kept cottages concommodations for many guests.

These are fest concerning one of the most promering and natural grifted sanitatiums in the world, ising and natural grifted sanitatiums in the world.

#### Location, Etc.

Board, \$10 to \$44 per week. Route from S. F.—
Take morning usin to Calistoga, Napa Co., Cal.
Alder survals of utain, steges leave Calistoga daily for Middletown, T. miles; \$4 rer \$x. Private team to Springs, 4½ miles, \$t. Express and P. O. address, Middletown, Lake Co., Cal. Write for further information,

J. Andresson, Proprietor.

### Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subgreed to examine its contents, terms of and give it their own patronage, and subgrieshle, said in circulating the journal, and making its value more widely known to others, and extending its influence in the account of the content of the cases it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If stready a subscriber, please show the paper to others.

#### Don't Fail to Write.

Should this paper be received by any subscriber who Cabould this paper be received by any subscriber in close not worth fig. A body of the first not fail to write us divect to stop it. A subscriber in the forest not for the paper to sary one who does not not frowingly send the paper to sary one who does not not frowingly send the paper to sary one who does not subscriber to notify us to discontinue it, or some trresults to notify us to discontinue it, or some trreducing the paper to some treducing the paper to some treducing the paper to the first subscriber to not tought the same that the subscript of the subscriber to subscribe the subscriber to the subscript of the subscriber to subscribe the subscriber to subscriber

### MINING SHYBEHOPDEBS. DIBECTORY.

	14 IdA Meyaqu A. Jennings 104 18 idate St 191 California St
ľ	Dorbec Blue Gravel M Co California, T Webzel. 522 Monggomery 54.
ı	I Tak
ı	NAME OF COMPANY. ' LOCATION, SECRETARY, OFFICE IN S. IF. CAMOUNT, PAYABLE
ı	LATEST DIVIDENDS—WITHIN THREE MONTHS.
9	
	St. view. Mennah 38 sinrollies 906 notylen M. M. L. absve M
3	be the Delegier in Co.
ı	II virth. fagura 48 vramovidoM 608, graphy 1, shows 7
ı	es equit Leura A
ľ	MAME OF COMPANY. LOCATION, SECRETARY, OFFICE IN S. WEETING DATE.  Almond M. Co
ı	MERLINGS TO HE HELD
	True Con M CO California. 1. 23. June 9. July 19. Aug 18. A Berry California 34
1	Paradise & LA G & S M Co. California 2 June 30, Aug 5, Aug 21, D Buck 309 Montyonery Se
	The Crown datable out of the state of the st
	TO OTT I STREET TO THE PROPERTY OF THE PROPERT
	The front of an or an analysis of the contraction o
	ad transplant con Official was and an anne Of anne Of M. Dad an bloom
	ac framogation continued of Olice Sparity of Contract
1	Lace Crown Sanger and the service Survivior Con attack of "C "RILLOHIED"
ł	
ı	Be even Mainle Co. 1. 18, May 20, John 6, 20, M. 20
	Hearth W. Dilly 25 W. L. Oliver mery St. London 10 West Monte and L. Oliver mery St.
1	Harring Confidence Co California and Line in the contract of the contract o
ľ	
Ŋ	California, 2, On May I7, June 22, July II, June 32, A one Sold May 17 Wersel
ı	TO SILL ESC
ı	A May 16, June 22, May 16, June 30, Marketman, A Maternan, A Maternan, A Maternan
ı	I aci Cromoganoni coc minuso it 2 Sur Sur o Sur
ı	COMPANY, LOCATION, NO. AM'T, LEVIED, DELING'NT, SALE, SECRETARY, PLACE OF BUSINES
ı	STATISTICAL OF TAXABLE AND MINISTER CONTINUE CON

#### S. F. Stock Exchange. Table of Lowest and Highest Sales in

	****	****	****		****		,	TERRET D' OF TO TOPET			
***					••••	ez*	****	Dadley.			
9°	09"	99		na*	09°	ĝg.		Central			
O I	06.	00.I		06.		ñ6°	08°	Creeker			
ĬI.	62.6		03.7	8,		00.8	£7	Отоwn Роіше,			
3	02.	92.	05.2	.24.	34.0	30	32.	Con, Pacific			
8.	69.	07.	99*	09°	09°	Ct.	99,	Caledonia			
2,5		32.25		00.2		00.2		Con. Imperial			
0 8	71.9	67.7		09.7		87.7	G7. 1	Сопиденсе			
[8]	82	8.25	00.7			02.7		Опоцак			
		20,0	****	LM.	0.7.7		69	Champion			
9.2	CZ 'Z	07,2	00°T	09°T	U£,1	00,2	09'1	Оряперко			
23		822		TZ	FOI		12	Con, Va, & Ual			
O'T		g) T		00 T	06	1,25	di i	Bulwer			
		77.5	****	77.5	****		11. 1	Bodie Tunnel			
6'E	06.1	02.2	09°T	0# T.	OT'I	00.2	1,30	Renton			
2.6	3,45	09.2	09°8	04,2	2,15	2.75	09.2	Rocale Con			
8.I	00.1	GI'I	1,00	0Z. I	06*	GT.L	96*	EGILC LSIC,			
0°T	96*	00'T	06'	50, I		1.05	G6°	Baltimore			
2,2	00.2	2,81	8'00	2.10	1.85	8.40	21.2	Ruthon			
7.7	98'9	62,7	00*9	00.7	00'9	00,8	13	Rest & Belcher			
							_	Erophy			
9,6	67.8	32, 7	67.6			06'₺	4.50	gelcher			
Þ.		0F*		38.	08.		66.	Argenta			
9'1	1.35	01, I	C2,1		31.1			Andes			
2.2	2,05	2.20	06°T		07,1		01.2	Alta			
0.4	06,8	3.75	3,50	3.25	3,00	03.8	3,10	Algha			
_				_		-					
June 30. July 7.				me		Jan	COMPANY.				
	ENI		END		END		END				
WEEK		MEEE		Mai	HAA.	NA:	MAE.	MAME OF			

								BI 3
FOT	07.8	00'6	0110	00°6	0918	Be	67.8	
97°E		0₽,I		OF I		08.I		
36.7	00 1	UYL	30 r	11. F	or r	00 4	1.25	thern Belle
								Disblooldsld
00'9	AT'E	GL'₽	C017	OOTE	00°F	80	06,₽	old stor
	ULT	94.7		09"7				
2 20		2.50		2,50	21.6	28.85	27.2	
001								White
06°	08,		67,		09"	06'	gr.	
1.50		07.I	66.1					tuck
07.I	GP.45	99'I		01.40		28°E	SP I	
97,	****	08,	02.		09,	07,	69.	
1,50	****	37.I	1.20			ZY, I	06,1	вьепдепсе
					****			эрөпдөпсө
		00.2					****	
00.8	문요	89	04°F	4.65	36,6	8g	08.4	8801010M 38 8
4.30	3.15	3°30	00.8	08,8	32,8	94.4	3 36	
	****	09°T	58. I	OZ.I	29. I	21.15	1,60	
29°T	98°T	06.1	1.35		07.1		T.35	
02,5		00.9	92.8		4.50			OKS COD
** . *	****	99.0	****		**.:		. ag	B. & B
						62.		16% To
99°	09"	gg*	• • • •	on°	09°	ĝg.		tral
00 I		00.1	06°			06,	98.	жет
EII.	62.6				gy. 9		£7	wn Point
62.			06.7	. 24	34.9	00.9	22.	Pacific
20	02.	30				30	20	Paritie

	****							
29	62.85	67.6	ąg	00.8	09'F	09.6	6,00	Yellow Jacket
6 E	04 I	06°E	69. I	02°T	35,1	2.15	08.I	Utali
3.8		3.40		3 52	60,8	00.₽	83.8	חוזסם הסווח ו
2.	****		**	72.	03.	98'	****	Syndicate
8.	0%	08*	04"	07.	09.	061	g7.	Scorpion
	**	**.,		00.6		· · · ·	****	Silver King
g.	CP.	ue.		O₽.	GC.	ng"	07°	Silver Hill
Ž.₽		₹6.₽		9£,₽		00.6	OF. P	
3.6		3 80		0F.I		GZ-I		
89		5.25		94. P		06.6	UU. G	Bayage
40.		70.7		20.5		02.7	00.3	Bilver Star
I.	****	OT.		gr*	OT.	GT"	01.	P. Sheridan
į.	09"	46.	Ċ₽,	09"		99.	0₽.	Peer
ŭ.r		50'T	çş.	06*		U.I	GY.	Perriess
0.8	15.2	90.8	32.7	8,	06.0	20	06.7	Potosi
7.2	02.2		28°I		dd.1		00,1	
26	00.8				82.7		00.6	Ophir
7 7		00.8	94.7	20		3,50		Occidental
2.2		00.6					00,8	North G. & C
0.0	GP.A	0015	05°5	OY!T		08.4	06,	Nev. Queen
0.6	Ab b	29 7	UPP	91 7		08 P	4,25	TOTAL SHOW
0.7	01:0	0010	0110	0010				
10	67.8		67,8		06,8	6.0	97.8	North Belle Isle
Þ[[	1 30	UP I	1,25	DP T	1.10	1 30	59. I	Northern Belle
								Northern Belle

#### Sales at San Francisco Stock Exchange.

2							
63 <b>9</b> 43	Union Con Vellow Jacket.	300	GE, 4	· · · · · Æ:	sino Linperis Squeri Las Cari	Солд	000
u8.1	U tah	300	09.I		toups	пихор	97.7
08.5	Union Con	099	OI.S		Imperie	Con	09
CP P	SIETTS METRICS	350	og7		Eino	Caled	200
		004	509		I43	Centr	JOD
o38	Scorpion	00 T	00.L		79.	() FOCK	{}GG
22 I	M. Belle Is. Ophir. Overman. Potosi. P. Sheridan. Peerless. Scorpion.	ISCO	\$01@F0	ot	anio4 a	Crown	350
50II	P. Sheridan	007	13(0) E	IS1	18 to Ca.	Con /	09F
67	Potosi	200	1370087.		Belcher on Erle nore or or or or or or or	CPOIL	094
Ŏ₽. 2	Uverman	002	03.2		6	Bodie	420
48	rintqO	087	00,I			Bulme	200
66	Y. Belle Is	09	01.133	0, I	e to tr	Baltin	300
00.3	Mevajo Mev Queen	009	08.1		əlaI	Веше	029
97 T	Mayajo	520	860 17.		19	Relch	072
P8. 8	Mono	08	St. S(0)(	3.40	дс	Bulli	330
g2. ₽	Мехісап	110	£2		Ведсрег	B. &	009
906	Lady Wash	T00	00.4			sáalA	976
908.		T00	504			Arzer	00F
0Z [	Justice	09	06.1		8,,,,,	SpaA	00¥
8g	Grand Prize Hale & Nor Julia. Julia Wash	09%	04,2603	8 3	881	.gstA	06£
09-1	Grand Prize	200	788	E .7 VI	ut TAG	TEAUE	T
0		_	_				

### Our Agenta.

uchocarind and another property we intend to send
at workly men.
Jerre D. (Mocalize—Arrzonz,
der.) W. J. Erreward and Erreward Co.
W. J. Freward and Erreward Co.
W. J. Freward and Erreward Co.
W. J. Freward and Erreward Co.
M. S. Frime—Alaring of Co.
M. S. Frime—Barte Mortens.
E. G. Horsow Butte, bonchan.
E. F. Sarra—Humboldt Co.
E. F. Sarra—Humboldt Co.
E. F. Sarra—Humboldt Co.
E. F. Sarra—Lamboldt Co.
E. F. Sarra—Lamboldt Co.
E. F. Sarra—Lamboldt Co.
E. F. Sarra—Lamboldt Co.
E. F. Sarra—Barte Sarra—Barte Cruz Cos.

Constrock Miners sent \$1300 to the sufferers from the Manaimo coal-mine disaster, Byck Fires of the Missas of the Cours of the Cours of the Missas of the

## Mining Olaims. diroriding Com M Go M Go M Goldrouge Company A M Glorgh. Seed to Bornz, Salt & Soda Co Col Gord Conging Control of Congress Construction Company Company Congress Mondro Collision Company M Co. Congress Mondro Congress March Congress March Congress March Congress Congress

Surveyor General Hammond has received from Washington the following list of patents, for mining claims in the Syste of California, issued during the month of May:

Washington Mining District—Eagle Bird, Cornucopia, Free Trade, Secret Treasure, Celia, quark mines.

usrtz mines.
Bath Mining District—New York, Rosedale, sbastopol, placer mines.
Bready Mining District—Nip and Tuck placer

Creenwood—Muntz quartz mine. Greenwo—Argonaut quartz mine. Glencoe—Mexican, Sierra King, quartz mines. Michigan Bar—Muddox Clay Bank placer

Mevada—Cleveland placer mine.

Mevada—Cleveland placer mine.

Erenoù Gulch—Centenniel gold quartz mine,
Brown gold quartz mine,
Dewell Hill—Wilkinson placer mine.

Pilot Hill—Wilkinson placer mine.
Georgetown—Anderson placer mine.
Garden Valley—Happy Flat placer mine.
Anburn—West Extencion Call Pasture quartz
mine, Whip-poor-will, Gibraltar, placer mines.
Quartz Mountain—Quartz Mountain, Esche,
Brundal Mapole mines.

Ghodzko, placer mines.

The mine. The mine. The line marks mine and wiles. The line mark mine and millsite. The sea Spring—Porrester placer mine. Take Brown's Valley—Darebroge quarts mine.

#### Mining Share Market.

Mining Share Markelt.

During the latter part of the week an improvement was shown in the proces of mining shares, owing to the disactions free in the Gould and Curry, yet all stocks base, kept up remarked well. For the usual channels of speculative thought, yet all stocks base, kept up remarked well. For the usual channels of speculative thought, yet all stocks base, kept up remarked well. For the same reason operations on the Cometock in several leading mines have been greatly disturbed.

The regular monthly financial statements of the mines are as follows:

The regular monthly financial statements of the mines are as follows:

Alpha base \$\$8666.85 season on family. As \$\$45.90.

The regular monthly financial statements of the sail financial statements of the set in the series of the set of

### Bullion Shipments.

We quote shipments since our last, and shall be pleased to receive further reports.

Uncle Sam, July & \$6000, Mt. Dishblo, 5, \$13, 695].

Uncle Sam, July & \$6000, Mt. Dishblo, 5, \$13, 695].

Germania, 1, \$5013; Hanauer, 2, \$5175; Crescent, 1, \$18, 47, 51; Hanauer, 2, \$5175; Crescent, 1, \$18, 47, 51; Hanauer, 2, \$217, 51; Landon 1, \$21, 1, \$18, 1, \$

THE Index says: Many Carsonifes are turning their attention to mining matters and fitting out prospectors for the country between Carson and Bodie.

Inventors. List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific States.

From the official report of U. S. Patents in Duwny & Co. 's Patent Office Library, 2:0 Market St., S. F.

FOR WEEK ENDING JUNE 28, 1887.

S. F. 365,518.—ORE-FREDER-J. & J. H. Hendy, S. F. 365,518.—ORE-FREDER-J. & J. H. Hendy, S. F. 365,522.—SCREEN FOR FLUMES, ETC.—D. B. Hunt, Angels Camp, Cal. 365,532.—BRICK KILM FIRE-BOX—J. W. Read, San Diego, Cal. —WAD-SORTER—Prenties Selby, S. F. 365,534.—WAND-SORTER—Prenties Selby, S. F. Ikerbynile, Ogn.

MORM.—Copies of U. S. and Foreign patents furnished by Dwoy & Co., in the shortest fine possible (by mail by Dwoy & Co., in the shortest and Poreign patents of the legistraphic order). American and Poreign patent between the control of the control order of the control order order order order order order order order or the control order orde

#### Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Scientrific Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

E3—E. Q. Deming, S. F. i. Mo. 365,170. beded
June 21, ISS7. This attachment to weighing seales consists of a device by means of which the scale-beam from the stop of latch holding the scale-beam from vibrating may be disengaged without the use of the tended in the state had be disengaged without the use of scale-beam is prevented from vibration or oscil-scale is prevented the my provided above its outer end, and this is quality provided with a short lever upon one side by which the operator of scale. This, however, is troublesome in many cases where the load has been placed upon the scale, "This, however, is troublesome in many scale, "This, however, is troublesome in many scale, and this invention is designed to obok and pencil in head for the purpose of tailying the pencil in head for the purpose of tailying the pencil in head this invention is designed to obvirate this difficulty. DEVICE FOR DISEMBACHUG SCALE BEAM LATCH-ES — E. O. Deming, S. F. No. 365, 170. Dated

co. No. 365.521., Dated Junes 28, 1887. This movestion relates to a new and useful sorten interpreted relates to a new and useful sorten interpreted relates to a new and useful sorten interpreted of the interpreted of the source of ditch and have ing for its object the establing and discharge of a sold debrie, and as Jesvee, etc., which come all debrie, and as Jesvee, etc., which come or ditch, end from passing or ditch, and preventing them from passing as earlied to the sank. The invention consists in a sections of the flume or ditch, said sorten redistrating it into the continuation of the distribution of the continuation of the flume below, the debris being caught by it and carried to one side. The revolving screen is employed to connect the wheel in the flume or ditch, suitable mechanism being travel of the sorten is a small water-wheel in the flume or ditch, suitable mechanism being travel of the sorten is at right angles to the function. А томати Вевеви тов Тимев амр Ditch-ев. — David B. Hunt, Angels Camp, Calaveras

High and the control of the control ENGINE GOVERNOR. - George E. Dow, S. F.

GRIP-LELEATING DEVICE FOR CARLE ROADS.—
Joseph T., Coodey, S. F., No. 365,168. Dated Joseph T., Coodey, S. F., No. 365,168. Dated June 21, 1887. This invention relates to the means of class of cable roads and to that class of improvements therein which relates to the means for automatically releasing the grip from the cable, and neglecting the older bring to avoid sociate and neglecting to cast it off at certain points where the region would necessary another road. The invention consists of another road. The invention consists of a fixed in the road-bed, said bar hier relates of the graphle of the passing mediate suits to consists of a fixed in the road-bed, said bar being adopted to bear down upon the rear end of sudding the seast the pawl which holds the grip-lever to come in contact with and force the main lever of the graphle of the payles of the bear down upon the rear end of sudding the cable is cast off. The object of the inversity is one to open wide its jaw, whereby the cast of a coping the cast of the inversity is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for tion is to provide simple and effective means for the cast of GRIP-RELEASING DEVICE FOR CARLE ROADS.—

## Patent Agency. Dewey & Co.'s Scientific Press



OUR U. S. AND FOREIGN PATENT AGENOR.

Home Agency over all others, by reason of long weathly many and important advantages as subblishment, great experience, thorough ayer wetablishment, great experience, thorough ayer committee, and out our our our our out out of the care of the configurations in our Agency will have the benefit of an illustration or a description in the Miniug And Schene tries which great protection to inventors. The tries which great protection to inventors. The tries which great protection to inventors. The state mainter, by the transact every breach of the profess on the Patents in all countries which great protection to inventors. The tries which great protection to inventors. The state mainter, of U. S. and Foreign Patents tries which great protection to inventors. The batent business, and by the Patents of the protection to be seen to the standard through our Agency. We can be a low as any first-class agencies in the least and nost velations. Our prices are all on the protection to the standard the protection to the standard the protection to the standard the standard three patents are all on as any first-class agencies in the Coast inventors are far superior. Advice and Circulars free,

DEAWEY & CO., Patent Agents.

Wo. 252 Market St. Elevator IS Front St.

S. F. Telephone Mo. 658. DEWEY & CO., Patent Agents.

No. 252 Market St. Elevator 12 Front St.

A. T. DEWEY. W. B. EWER. GEO. H. STRONG.

### NOW READY. The Techno-Chemical Receipt Book

THE TECHNO-CHEMIOAL RECEIPT BOOK —Containing Several Thousand Receipts, covering the Latest, to make Useful Blocoveries in Otemina and Everal Discoveries in Chemina and Everal Discoveries in Containing Seal Fectivality and their Preceipts, and and Perceipts, and and Perceipts, with additional by William T. Willer, and the Herraching, with additional by William T. Walliam H. Wahl, Ph. O. Heidd, Discoveries of the Royal Actionisms of Sections, and Perceipts, and Everal Discoveries of the Royal Actionisms of Sections of the Royal Actionisms of Sections, and Perceipts of the Royal Actionisms of Sections of the Royal Actionisms of Sections of the Royal Actionisms of Sections of the Royal Action of Section 1 in Containing and Intelligent Section of the Royal Action of Section 1 in Containing the Intelligent Section of Section 1 in Containing the Intelligent Section 1 in Containing the Section 1 in Section 1

Importers, Ta., T. S. A. S. V. S. A. S. A. HENRY CAREY BAIRD & CO., Industrial Publishers, Booksellers, and Importers,

ELECTRIC SYSTEM .03 THE RAE

FOR PACIFIC COAST.

CAPITAL, 4 . \$1,000,000.

Incorporated under the Laws of the State

V L BEYALON E-Sedicitor Works

OEC C BEHKINS E- Gov. of CannonWA VIVORD -- Presidents

WA VIVORD -- Presidents 

**MINCHEZLEY HOUSE** 

44 Third Street, San Francisco, Cal.
This Five-proof Brick Building is centrally located, in the heathlistes part of the eds.) only a half block from the Cernul and Polace Hotels, and olose to all Steamboat and Railroad Offices.

HOT AND COLD BATES FREE. Laundry Free for the use of Families

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE,

J. POOLEY.

ELECTOR BELLEVIE



## No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO

-WANUFACTURERS OF-

#### ("DYNAMITE" OF "GIANT") NILHO-CILACEBINE

Blasting Powders.

boh removing stumps and trees, Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager.

GIANT POWDER COMPANY

knowledged by all the Great Chemists of the Wo tire Three Kinds of Powder, which are ac

The Safest and Strongest High Explosives in the Market.

CIVIL BOADER OF DYKAMITE,
Of Different Strengths as Required.

JUDSON POWDER IMPROVED. MOBEL'S EXPLOSIVE GELATINE, which contains 94 per cent of ultro-Clycerine, and

FOR RAILHOADS AND LAND OLEARING. Is from three to three ground, pullentees more ground, pullentzes better and saved by all the Estingords and dravel Claims, as it breaks more ground, pullentzes better and saves time and money. It is as dry as the ordinary Blasting Powder and runs as freely.

BANDMANN, NIELSEN & CO.,

GENERAL AGENTS, SAN FRANCISCO, CAL.

## **MREKCEK, 2 KOFFEK OKE CKN2HEK**

Crush 8 to 10 Tons per Day,

Tortable and Tortable.

This atuli fledged Quartz Milthout geatings, construct and indeed Quartz Milthout geatings.

Tower applied direct. Works Ore at Low Cost annakranten create sease other machines in reducing and very little friction. Beats other machines in reducing and very little friction. Beats other machines in reducing and remakranten ore. And costs less, All who have used this mill recommend it highly. Splendid for low-grade ore on account of low cost of working.

WM. GUTENBERGER,

Jow cost of working.

The commend of highly. Splendid for low-grade ore on account of the cost of working.

The commend of highly. Splendid for low-grade ore on account of the cost of working.

Sacramento Foun dry. Cor. N and Front Star SACRAMENTO, OAL. Any infringement on this mill will be presecuted to the full ex-tent of the law.



## PERFECT PULLEYS

Sole Licensed Manufacturers of the First Premium Awarded at Mechanics' Fair, 1884.

Medart Petent Wronght History Mandent Pulley
For the States of California, Organ and Vereda, and the Prestrontes of Gabo, Wash
Montans, Wyoming, Usah and Artsone. Lightest, Strongest, Okeapest and
Best Balenced Pul. sy in the World. Also Manufacturers of

BAT DEC 20

WINING WEN

A strong company about to bogin extensive work near Motelumne Hill offer paramagent positions to the right

MINING BOREMAN.

Must be used to power drills, good timbering, and caps-is of handling any number of men.

NAACHINIST.

ASSAYER, Capable of setting engi-

### **'000'08**\$ A BARE INVESTMENT.

Two Hundred Acres of Placer Mining

Yreka, Siskiyou Co, Cal.

THE JUSTLY FAMOUS

## Anderson Springs

Are beautifully and delightfully located in a grand matual park, with fine large grows or locate from intrough strong and stronger and strong and strong to 
carl springs and a nord nor pring;

These and sulplur springs and a cool trong spring;

These springs have been well established for years by

An order of the strong part of the spring of the

Excellent Board with Good Home Cooking.

Good care is taken to make living at the hotel and cockeyes se ploasant and agreeable to all as possible.

The remedia qualities of the springs are indeed wonderful. Excellent bathing in both mineral and pure derful Excellent bathing in both mineral and pure Board, \$10 to \$14 per week. Ohildren under 12 and Board, \$10 to \$14 per week. Ohildren under 12 and Courb price. Rouge from S. F.: Take monthing their to fourth price. Rouge from S. F.: Take monthing their to fourth price. Rouge from S. F.: Take monthing their to fourth price. Rouge from S. F.: Take monthing their to fourth price. Good from the second of th

J. AUDERSON, Proprietor.

#### Anti-Incrustation Powder MINANS

AVOID IMITATIONS,
AVOID IMITATIONS,
J. C. WINANS, Agent,
A. C. WINANS, Agent,
Agent,
A. C. WINANS, Agent,
Agent,
A. C. WINANS, Agent,
A (ESTABLISHED 1856)
Conclinues to lead; "Inlly guarantised, Removes scale from bolders and prevents its formation, Send for obvought with the concentration of the particular and prevents a

DIVIDEND NOTICE.

The German Savings and Loan Society.

For the half year ending June 30, 1837, the Board of Directors of the German Savings and Lone Scotety has declared a dividual at the respect of four and chirty-two deposits and three and saxty non-hundredths (\$ 60.100) per cent per annum on ordinary deposits, pay also con and alty on the per annum on ordinary deposits, pay also on and after the lat day of July, 1837. By order,

Practical Treatise on Hydraulic Mining. By Aug. J. Bowie, Jr.

### COAST. COAL MINES OF THE WESTERN

A few copies of this work, the only one ever published treating of Eacific Coast Co. I Mining, have been obstained, and set for sele at this office tor \$2.50 per copy. I twee written by W. A. Goodyser, Mining and Civil Engineer, formerly of the California slate declogical Survey.

INVENTORS, TAKE NOTICE!

E. PETEKSUN, MODEL MAKEK,

258 Market St., M. E. cor. Front (up stairs), San Francisco. Experimental machinery and all kinds of metal, tin. copper and brass.

WANTED-AN ASSAY OUTFIT.

OHAS. M. OLARK & CO., sanch Brokers, Proscott, Arlzona.

BUSINESS

COLLEGE,

Anothers, Wyoning, Utah and Arksons. Lightest, Strongest, Obespeess and Montens, Wyoning, Utah and Arksons. Lightest, Strongest, Obespeess and Montens, Wyoning, Utah and Arksons. Lightest, Strongest, Obespeess and Montens, Wyoning, Utah and Arksons. Lightest, Strongest, Obespeess and Montens, Wyoning, Utah and Arksons. Lightest, Strongest, Osc. 1881. Strongest, 1881. Strongest, Osc. 1881. Strongest, Osc. 1883. Framont Street, Send Factor Licentees and Montens, Wos. 1883. Framont Street, Send Factor Carolles.

Sand Proceeding Carolles and Montens, Wos. 1881. Framont Street, Send Factor Carolles.

## Iron and Machine Works.

CALIFORNIA MACHINE WORKS,

WAN H. BIRCH & CO.,

WAN H. BIRCH & CO.,

ENGINEERS AND MACHINISTS,

OS. 119 Beale St.,

ENGINEERS AND MACHINESTS,

ST. 119 TO THE WORKS,

ST. 119 TO THE WO

Steam Engines, Flour Mill, and Machines Machines Machines Machines

Brodie Rock Crushers, Hydraulic, Steam Power, Hydraulic, Side Walk and Hand-Power RI,RY OF OF PROPERTY OF THE PROPERTY OF T

Menulacturers of B. E. Henrickson's Patent Automatic Satety Catches for Elevators. All kinds of machinory made and repaired.

UNION IRON WORKS,

ROOT, NEILSON & CO., SACRAMENTO, CAL.

Engines, Boilers, Steam

**WACHINERY FOR MINING PURPOSES,** VED VIT HINDS OL

Front St., bet. N & O Ste., Sacramento, Oal. Flouring Mills, Sav Mills and Quartz Mills Machinery constructed, fitted up and repaired,

304 and 306 Beale St., San Francisco, Oal. -вемолер до-HALL'S BOILER MOBKZ

Marine, Stationary & Portable Boilers. PRACTICAL BOILER MAKER J. V. HALLI,

Smoke Stacks, Hydraulic Pipe, Oil or Water Tanks, re and Water Buckers, desonaters, Girtders, Eke-ron Ship Building. All kinds of Sheet Iron Work. Ke-airing promptly attended to at lowest possible terms.

Golden State & Miners Iron Works.

STEVEUSON'S PATENT Marufacture from Castings and Machinery of all Kinds at Greatly Reduced Rates.

ROId-BORTA BARLGAMATORS,

Golden State Pressure Blowers.

First St., between Howard & Folsom, Sts.

THOMPSON BROTHERS,

ENGEKA FOUNDR

29 and 181 Beale St., between Mission and Howard, S.F

MANUPACTURERS OF CASTINGS OF BURRY DESCRIPTION

Works, Mo. 315 Mission 8t., San Francisco. Special attention given to Woodworking Machi Iteam and Gas Engines. Correspondence solicited.

MINING ENGINEERS.

W. A. GOODYEAR,

MINING EXPERT AND GEOLOGIST. Civil and Mining Engineer,

Address "Business Box A," office of this paper,

ROSS E BROMNE,

Mining and Hydraulic Engineer,

No. 307 SANSOME ST., SAN FRANCISCO.

American Exchange Hotel O.T. O.D



St

The above Heel is estimated in the midse of the Bank-firk and Commercial Houses of the city, and is by far the most home-like and desirable Hotel to stop at. OHAS. & WM. MONTGOMBRY, Prop'rs.

Engraving Superior Wood and Metal Engraving, Diechtotyping and Stereotyping done at the office of this paper.

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades, Agents for Growers and Manufacturers. Charterers of Vessels for all Trades, Agents for the Mexican Phosphase and Suphur Company's Froducts.

Have correspondents in all the chief of ties of the United States, Europe, Australia, India, Ohina and the principal lands of the Peoific. Purchase goods and asil chalfornia products in those consulted.

General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of Ireland ATLAS ASSURANCE CO., of London; BOYLSTOW INSURANCE CO., of Boston, Mass

GRo. W. Prascort, President. Irvine M. Scort, Gen'l Manage GRO. W. DICKIR, Марадок. J. О В Сими, Secretary.

H, T, Scort, Vice-Pres't and Treas.

Location of Works, Potrero. P. O. Box 2128.

Office, 216 Market St., S. F.

BUILDERS OF --

Home Industry. All Work Tested and Guaranteed. Pump Agents of the Cameron Steam STEAM, AIR, AND HYDRAULIC MACHINERY.

Рамз, Зеттіекз, Ветовтз, Ето., Ето. BARY HOISTS, VEUTILALING FAUS, SELV-FEEDERS, PULLEYS, BAMATE

VERTIOAL ENGINES, ADORATIO CUT-OF ENGINES, AUTOMATIO CUT-OF ENGINES, SHARTIVE,

NNION IBON MOBKE TRY OUR MAKE, CHEAPEST AND BEST IN USE.

Successors to PRESCOTT, SCOTT & CO.

HINOKUEY, SPIERS & HAYES, Proprietors.

Office, 230 Fremont St., gen Frencisco [ESTABLISHED IN 1865.]

MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or Compound Stens or Side-whoel Engines,

Works, Cages, Ore Buckets, Ore Cars, Pumping Engine and Pumps, Water Buckets, Pump Columns, Air Com pressors, Air Receivers, Air Pipes, MINING MACHINERY.—Hoisting Engines and

Crusbing, Amalgamating Pans, Settl rs, Furnaces, Re-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Recuccing Ores, Water Jackets, etc. MILL MACHINERY.—Batteries for Dry or Wet

MISCELLANEOUS MACHINERY.-Flour

Mil Machinery, Saw Mill Engines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Wheels.

MORKS ORE WET OR DRY. Tustin's Pulverizer

DEANE STEAM PUMP.

**ENGINES**BOILERS TUSTIN'S PULVERIZER.

Water Pipe, Fump or Air Columns, Fish Tanks for Salmon Canneries Either for use on Steamboats or for use on Land.

OF RVERY DESCRIPTION.

Deane Steam Pump, GRINTS FOR THE PACIFIC COAST FOR THE

CO. MILL PACIFIC ROLLING

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Cast or Wrought Irue to pattion or for any service.

GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

CHINERY CASTINGS of Every Description.

SUPERIOR TO IRON FOR SOFT and DUCTILE,

HOMOGENEOUS STEEL,

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Skeel Rods, from \$ to 8 inch diameter and Flats from I to 8 inch. Angles, Tees, Channels and other abapees seed Wegen, Buggy, and Truck Three, Plow Steel; Machinery and Special Shape Steel to size and lengths. Starting the Anti. Starting of the start Machinery and Locomosive Aries and Truck Bugges, Channel, and Truck Bridge and Machine Holes, Leg Screws, Nuts, Washors, Shikes; Channel, and Tiron, Bridge sholts, Leg Screws, Nuts, Washors, Ship and Bostne, Angle, Channel, and Truck Bridge and Mord Morks Becalaty.

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL.

vad Iliw erebro 📆

SAN FRANCISCO.

ка семинавания INCERSOLL ROCK DRILL CO.,

THIED EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM KOBK

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIOUS

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

ni betsereini aredto bas ENGINEERS, CONTRACTORS,

WINING WEN

NOTICE TO

PARKE & LACY

SAN FRANCISCO, CAL. 8 California St., and 21 Fremont St.

Mining Vats and Tanks

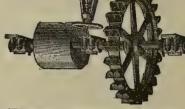


PRECIPITATING VATS, LEACHING VATS WITH FALSE BOTTOMS.

For Mining Purposes. SOLUTION and WATER TANKS

San Francisco. Mechanics Mills METER' BUSSELL & CO.,

WATER WHEEL,





THIS WAS ONE OF THE FOUR WHEELS TESTED TAUS 40 ONE OF THE FOUR WHEELS CALL, and for positive a competitors. Send for contract of the first of the fi

, ISSOEDI

Catalogue No.5, Jan I, 1887,

CLAYTON

ROCK DRILLS, AIR COMPRESSORS,

And General Mining Machinety.
For CATALOGUES, ESTIMATES, Etc., Address

Office, 43 DEY ST., NEW YORK Clayton Air Compressor Works,

If you want a good pair of Gloves, ask your merchant for our brand,

LEAK GLOVE MANUFACTURING CO.,

PORTLAND, OREGON.

BAN FRANCISCO, CAL,

BALT LAKE CITY, UTAH.



Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

Machinery

ENGINES and BOILERS. Working Mining Machinery, Steam Pumps, Wood and Iron

SEND FOR CIRCULARS.

R.S. MOORE, Superintendent,

WM. H. TAYLOR, President,

HEINE SAFETY

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

SAFETY, Has the Following Advantages:

DURABILITY,

ECONOMA'

L. R. MEAD, Secretary.

AND FACILITY OF INSPECTION and REPAIRS.

Guaranteed More Efficient than any other Boller made. Bollers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Wor k Hueter Bros. & Co., California Jute Mills, and other places. . вап пі wол төмоч взтон 000,00

REFRIGERATING MACHINERY for Steamships, Browerles, and Collars. TO SHEGILDE

WILSON'S PATENT GAS-PRODUCER.
STEAM HOILERS of all descriptions
SUFAM SHIPS—Steam Vestics, Martine Engines, Glarifers, Double Effects, etc.
STEAMSHIPS—Steam Carpor Winches, etc.
Karbuilders of 120-steam Gald Mill for the Alacka Mill and Mining Company; 60-steam Mill for Quartz Mountain Mining Company.

Maining Company.

**MATER TUBE** 

Manufacturers and Sole Agents for the Pacific Coast for

OUARTX MILLS—Gold and Silver, Copper and Lead Smetking Works, Roasting Furnaces of all kinds.

AIR COMPRESSOR—RESPOND—TO Prover Transmission.

HYDIRAULIC PUMPING and Hoisting Machinery.

WEGOLEH HON WARER PIPE & Sheetalky. More.—Have just completed order for 35 miles of 44-inch place from for Spring Valley Wakes Works Company, San Francisco.

SATEMAR HOLE WORK OF THE EVER PIPE & Sheetalky. More making Single, and Compound.

SATEMAR OF EVER PIPE A Sheetalky Compet Valve Automatic, Single, and Compound.

SATEMAR OF EVER STREEL—RIM PULLEYS—Fifty per cent lighter and 25 per cent cheaper than cast
ton pulleys; will not break in transportation.

BOILER

IN GUARTZ, GRAVEL, OR PLACER MINES.

NOTICE TO GOLD MINERSI

JUSTINIAN CAIRE, Agent, MOTICE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are tested before leaving our works, thereby avoiding the complaints
about light weight, made so often before we started
in this branch of industry.

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

BATTERY SCREEUS AND WIRE CLOTH

HYDRO-CARRON ASSAY FURNACES Agent for HOSKINS'

оке скознев.

ZJJENJ) Roller F. A. HUNTINGTON,

Mining Machinery of Every Description, CONCENTRATORS AND ORE CRUSHERS, Centrifugal

No. 108 FIRST STREET.

SAN FRANCISCO NOVELTY AND PLATING WORKS

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

steam Engines and Shingle Machines.

No. 45 FREMONT STREET, - -

Sectional View of Pulverizer. Saws dreerted Tooth

N. W. SPAULDING

SAW COMPANY

SPAULDING'S

Centrifugal Roller Quartz Mill.

40A. S8 1885

logue. 17 and 19 Fremont St., San Francisco. oi au amda made to order. Send for Descriptive Cata-GAW MILLS AND MACHINERY

CIRCULAR

CHISEL BIT

PNEUMATIC **PULVERIZER**,

The principle of pulverization consists in the employment of two

MADE OF BEST SOFT LAKE SUPERIOR COPPER

POWERFUL OPPOSING CURRENTS

Of dry super-heated steam, so arranged that they continuously charge themselves with crushed or granulated material, and be the track develority of the steam currents the minerals are deabted existent souther with another word of concurrent when as to cause the laradest ores to be pulverated to any degree of themses desired. The high tempenture of the successive weartag parts, and the common and the concerning the steam currents employed, through which every minner to particule of ore mark foold. The light weight and inexpensive weartag parts, are the light weight and employed the constitution of the fullyerizer, the extremely small and unexpensive weartag parts, are the WOMDE and elimphicial parts. The Common and SURFKIME of all who writness is operation. The Common and Property of trunsfer of all who writness is operation. One of the constitution of the particular of all who writness is operation. One of the particular of the partic

10 TO SOO TONS PER DAY,

including a Sectional Steam Boiler supplying all the power required.

E. A. LUCKENBACH, Sup't. PNEUMATIC PULVERIZER COMPANY,

2 and 4 Stone Street, NEW YORK,

Write for Particulars.

**'E 'O '王 (00'929** 

OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The wear and teat merely nominal. A machine can be seen in working order and ready to make tests at \$20 Framont Street, San Francisco.

THE MONTANA COMPANY (Limited), LONDON, October S, 1885.

-Having tested three of your Frue Yanners in a competitive that with other similar machine eathefied curselves of the superiority of your Vanners, as is evidenced by the fact of our have eathefied curselves of the superiority of your struly, and your machines for immediate delivery. Yours truly,

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; Febru-ery 20, 1883; September 18, 1863. Patents applied for. M. E.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 addi al Frues and more stamps have been purchased.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

VANNING MACHINE FRUE CONCENTRATOR

San Francisco, Cal. Nos. 39 to 51 Fremont Street,

ENGINES SUG WACHINERY NEW and Dealers in SECOND-HAND BOILERS,

ENCINES **Sud Boilers**. Stationary, Portable, and Hoisting

Shafting,

The Volker & Felthousen M'fg Co.'s Machiniets' Tools F. Blaisdell & Co.'s Machiniets' Tools

AGENTS FOR THE SALE OF

PLANERS, SHAPERS,

Pulleys,

Boxes,

Hangers,

MACHINERY,

SHINGEE MIFFS' Efc.

PECIAL AUTOMATIC ENGINE

MOODMOEKING

[Manufactured by the Cummer Engine Co., of Cleveland, Ohio.]

guq olds BELTING.

LUBRICATING COMPOUNDS

LEATHER and RUBBER

RCOMEKS AND EXHAOST FANS.

MINING PUMPS.

CENTRIFUGAL PUMPS,

Steam Pumps of all Makes,

OF THE BEST MAKES.

PIPE and PIPE FITTINGS.

spoop Brass

**FILLINGS** 

Ore Feeders. Concentrators, Automatic draulic Giants, "Triumph" Ore chinery, Hydraulic Gravel Elevators, Hy-Hydraulic Mining, Quartz, and Saw-Mill Ma-



**ROILER. NOTJ**3ZA

NEW AND RADICAL DEPARTURE IN

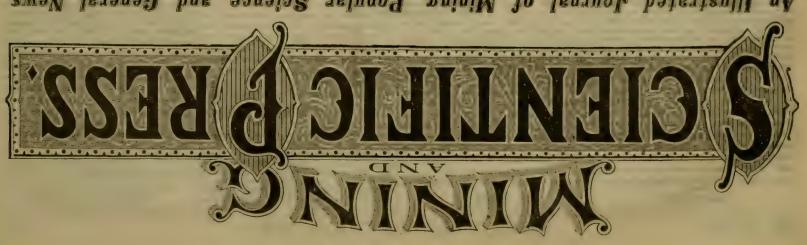
GENERATOR. SIFAM

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

San Francisco, Cal. SHED COLFOLK, MILES ON STRUCT and DEWORKS, WATER IN CONCENTRATIO
WORKS, WATER ALCO, OF MAY DEWORKS, WATER ALCO, OF MAY DEWATER ALCO, OF MAY DEWORKS, WATER ALCO, OF MAY DEWORKS, WATER ALCO, OF MAY DEWATER ALCO, OF MAY DEWA

**MOTYAR8** 

MACHINERY WINING



BY DEWRY & CO. VOLUMВ LV. Митрег З. SAN FRANCISCO, SATURDAY, JULY 16, 1887. Illustrated Journal of Mining, Popular Science and General News.

A Big Bonenza at Butte, Montens. .eniM Tevile bna blob eoila edT

[Written for the Parss by our Correspondent, R. G. Herrox.]

in 1876, when the only development was a Butte, M. T., The original property was pur-chased by the Walker Brothers of Salt Lake, lo qmeo gainim-ztranp eanemmi won edt ni y The Alice Mining Company's property was really the first opened and worked continuous-

a large number of olaims surrounding the old 25 feet. The middle vein when it is divided but few of the Butte companies operate on that

into three parts is obiedy in a broken-up and decomposed condition, and above the water level contains olay and earthy matter mixed level contains olay and earthy matter mixed

the character and grade of the ore is concerned, Are virtually the same as the Alice, so far as The General Features of the Magna Charta and pink spar or earbonate manganese, with silver ore, form the filling of the vein. with oxides of iron and manganese. Below the water level they find iron pyrites, zinc-blende,

shaft 30 teep. These gentlemen at once 1300 in length by 800 in width, making the mag- | but the deposits are much larger, and, in conseadjoining that on the east is the Valdemir, feet on the east there is the Magna Oharta, a bull length old in 1500 teet by 600 in width, and in width; then crossing Clark's Fraction of 200 Alice, 1200 feet in length east and west by 550 era tadt seitreqorq laqioning edt tadt betate shaft era pried med tad betated won ent era pried won seit for the seit of the s years. In a report by Prof. J. E. Clayton, it is ground to keep their immense plant running for to sonsbunds ne svad bas mislo soil A lauigino

VIEW ON THE SIX HUNDRED-FOOT LEVEL OF THE ALICE MINE, BUTTE, MONTANA.

dund qsia recely gives support to a large number more in infecent total of 3000 feet in length on the Main quence, produce a larger yield of milling ore, is a strong vein and carries about the same obtaining supplies of fuel, mine timbers, saft Rainbow lode, as the vein is called. Beside The Alice Company management look after the amount of silver the main ledge does.

bad gaiqota elttil tud

edi deomia ni evo lo

the Ourry. In this the body oompany, car-company, car-cay, In this

property owned by

1200 feet to snother

On the 200-foot level

range from 400 to 1200 feet in length.

north and south to

and pumpway, From each 100-foot level

cageways and a ladder

4½ in the clear. It is divided into three

The shaft is 13 feet by The main A lice shaft age of teet deep.

In the Mine.

and copper mining camp in the world.

most extensive silver

has grown to be the

Butte, notwithstand-ing the fact that she

eno Ilita si vasquio

das grown around their works. Thi the community that

to Iliw-boog eat evad я сопведиелсе they

and have always em-ployed a full force.

class from its inception down to the present time. They have always paid the regulation

greater or less extent, wear out and break reason except long enough to make necessary repairs to their machinery that will, to a

stamps hung up for want of ore or for any other

short sighted plan. A certain amount of the gross product is always invested in prospect

work, and as a result they never have their

down,

The record of the company has been first-

the mainstays of

сотратетепте

enoitibnoo nigriv

they do not have to run nearly to its capacity, but it is a very healthy accessory to a mine to have power in reserve in this department, (Concluded next week.) would not know it was in motion. The weight quunq edT , enot 00c viran at beimpies si were placed beside it with your back to it you Francisco. So carefully has this immense weight of machinery been adjusted, that it moves noiselessly back and forward, and if you from which this engraving was made was fur-nished by Miss Eva May Carter, lately of San the enormous weight of the rods. The sketch the 600-foot level is shown a portion of the one of the first said the immense bob, one of four placed at different levels to counterbalance pacity to carry their mine down to the 1500-foot level. In the engraving which we give of plant in the Territory, and is of sufficient In this main shaft is placed the immense Cor-ish pump. This is the heaviest pumping

The Alice Company has acquired by purchase | vein the width does not vary much from \$0 to linus their course and prospect it. Happily shundance of ground, only needing the good judgment and conservative management to conemi shu itan nort enmo baha bab asa And this company has paid dividends amount-ing to four-fitba of its capital stock and has an and that is, that for the past year their smelter pect work, and if he did any, he had to carry it on "under the rose, as it were." Well, the facts in this case could lead to but one result, s converestion informed me that the general man for prosgeneral public. One of these in particular I now call to mind. The mine superintendent in advantage to their stockholders, as well as the anatanoM rafito to redmun a tast voitoq rieth bebiese a stiw estatimi bluce seinaqmee gainim pect work all the time. This is one feature the correct policy in view; that is, of working a portion of their force on development or prosgeneral interest to their mining operations with

of the deposit,
The lead proper between walls varies very ties are situated very nearly the central portion worked for a long distance east and west, and, from the general indications, the Alice properremarkable district. It has been traced and workinge. Prof. Clayton says this is the strongest and most important of the great fissure veins of this

other locations adjoining the ground they are now working. Some of these are good proper-ties and can be developed through the present

Rainbow lode, as the vein is called, Beside this the company holds by purchase some 20

much sometimes, being confined to one vein and then widening out and splitting up in two and three distinct veins, each one carrying a quan-

tity of first-class pay ore.

The formation between these ore shoots is a light gray granite mixed with clay seams.

When the pay ore is confined to one continuous triat the pay ore is confined to man of the triat the width does not yary much from 20 to

tinued low price of silver. Still I think Butte mines will do to tie to. only point we have any fears upon is the con level, and no signs of playing out yet. The in this camp, for there are here the Anaconda, Lexington and Alice all down to the 1000-foot

down to water level and your ore will play out." This does not seem to have been the case

bave said, " Mever mind; wait until you get official report of their production for May gives the amount as nearly \$100,000. Croakers

Alice, and that is the Lexington.

tadt quae ein ein ein en ylno ei eest tan andt digeb reserg a og eester beheng end

to the 1000-foot level, and they are now at work cutting out the station for the purpose of con-

The mine explorations have been run down

successful operation of an extensive silver mine.

obtaining supplies of fuel, mine timbers, salt and the various other necessities incident to the

tinuing the sinking another 200 feet.

·ibai bas aem employs directly som

тре сопрыву

number of wage-work-

nam betirigs eithra a rerig and bna tren tren and sumpologue

из реел оретатей іп

reason that it has al-

edt ot vrotsaleitee edt rot oildng fereneg

idend-paying mines. The mine has also been

been olassed with divse the tree as protest against a tree at the Alice has a large

tions have been eatis-

later on in this letter. to it, as will appear

guibba Ilita era yedt

improved machinery. As a matter of fact

gaibbs bas taslq riedt large force, and year by year

stantly working a

theу have been con-

won ti sa betaroq

-roomi nedt saw ynaq .flim-revlis

a of Hada niam edd They put a force of men at work, sunk

develop the property.

tematically open and Went to work to ays-

Дре сош-

gaidspro-yrb depth of 500 feet, and then erected a 20-

.abaata

Since that time

That their opera-

At pres-

New River.

Smith Brooks, the veteran prospector of New River, was in town this week, and we learn

from him that camp. Work is progressing and developing favorably in that camp. Work is progressing steadily on nearly all the ledges, and the ariser tras and mills are run to their full capacity. From the Mountain Boomer, Ladd & Clemens are taking very good rock which they orush in an areatra—the last lot of rock went 500 to the too; they have a fine property and the ledges

are taking very good rook which they orush in a srastra—the last lot of rock went \$60 to to the are an areatra—the last lot of rock went \$60 to to the are are are are are they are they allows every sign of permanency. They will not true the Hard Tack this summer, as their over true the Hard Tack this summer, as their over true the Hard Tack this to the Hard Tack they will made a new strike in an unexpected manner, the road, the road into a removing the surplus earth from the road, the road, the road, the road, the road, the road into a ledge was exposed, which, being followed in for about 20 feet, developed into a four-foot ledge of \$12 rock. Superintendent followed in for about 20 feet, developed into a four-foot ledge of \$12 rock. Superintendent is being to read in the about 20 feet, developed into a followed in for about 20 feet, developed into a feat, and the Mary Superint of 18 feat in the state out for the road in the state of \$10 feet, developed in the state of \$10 feet, \$10 f

The Mulatos Mine.

[Translated for the Press from El Minero Mexicanso [Translated for the Y.M. M. M.]

Sources, and the same of the entroit of School of School

to etste Mulatos gold mine in the State of

In miners' circles much attention has been

directed to the proposed sale to an English com-

abone marked out, with shafts and thunnels or expected with intelligence, pioneer district would soon surmount the past and develop into one of the wealthirest mining and develop into one of the wealthirest mining. "Alternative mining the face of the globe."

Silver King, A. T., July 4th.

Reduction Works at Albina, Oregon.

Albina Courier, that the present location of the plant of ourier, that the present location of the plant of the Portland Reduction Works in East Portland was utterly inadequate for the purpose, and the directors have been looking for a more suitable place. The capital stock was also too small to carry on the business properly, and efforts have been made to increase it to \$300,000. Success bas crowned these efforts, is that double the interest of local capital is the that double the smount asked for could be secured if desired. The next thing to do was conced if desired. The rext plant that would be occurred if desired. The rot plant that would be construction of first-class reduction works construction of the expansion of the same when needed.

give the company all the room needed for congrany all the room needed for congrany all the room needed for congrany all the room needed for the congrand of th

OCKE DUST.—In a stroll about the smelters of the Arizona Copper Company last week we found Mr. Colquehona conducting a simple and for the Arizona Copper Company last week we found Mr. Colquehona conducting a simple and secondulated. Should his experiment prove a seconaulated. Should his experiment prove a success, a very large percentage in the saving of the last the smelters and concentrators, well, and the output is very actisate of the concentrators, well, and the output is very actisate of the strong are also burraing in the results. Wr. Sort, the supply store we found Master Machent At the supply store we found Master Machent as a pin and in perfect order. Mr. Sort is neatter of the capply store we found Master Machenia as a pin and in perfect order. Mr. Sort is a neatter of course, first-class mechanic, and, as a matter of course, first-class mechanic, and, as a matter of course, everything with which he has anything to do is accomplished in a thorough and workmanlike accomplished in a thorough and workmanlike accomplished in a thorough and workmanlike and the HEBS of the supply sort or ourse, well when the supply sort or ourse, which we have a matter of course, the supply sort or ourse, well as a supplier of ourse, wortybing with which he has anything to do is a sort of the results of the supply sort or ourse, went the supply sort or ourse, were also be a suppliered in a thorough and workmanlike and the supply sort or ourse, we have a suppliered in a storough and workmanlike and workman

THE Salom (Or.) Sentry says: Oregon pine, or, as we call it, fir, has received another medal, if we may be allowed the use of the word, in the building of the new yaoth, which has just won the race on the cocasion of well of the the nests were of the cocasion of the tastest in the world, the means were of Oregon fir. The fine woods from Australia, bothe fastest in the world, the means were of oregon fir. The fine words thought and timber is secured, were tested thoroughly and timber is secured, were tested thoroughly and rejected as not equal to our fir.

**CORRESPONDENCE,** 

A New Camp in New Mexico. We adm't, unindersed, opinions of correspondents,—EDS.

This new strike was discovered by Harvey. This new mining camp 10 miles from deorgebown. This new strike was discovered by Harvey Lyons, about the first of May. He has been in that there was mineral in large quantities that be acondent, and finally succeeded in mained to very soon on top of the ground rich is remained to villings the strike. This same belt had been mained to villings the ore on top of the ground rich in mained to villings the ore on top of the ground rich in mained to villings the ore on top of the ground rich in mained to villings and allow the camps in the Territory, but succeeds millions, and the old reliable camp of the camp in the Territory, and the camps in the Territory, and the camps in the Territory, and the camps in the Territory, acceptance of the camps in the Territory, acceptance to the camp of the cam Moxico, and at the present writing am at the new mining camp 10 miles from Georgetown.

This new strike was discovered by Harvey Lyons, about the first of May. He has been in the strike was a second was a second with the first of May. Editors Press :—It is nearly three years ago since I corresponded with your journal, and was then located in Deadwood, Trinity county, Cal. Since that time I have been in Aritona, Old

EDITORS PRESS :-The following may inter-Pioneer District, Arizona.

end, pipe, spring vein and inverted funced into this pipe, spring vein and inverted funcial mine of this Pioneer district, has developed into a magnificent fleature, running southwesterly discribing and northeasterly with a southwesterly direction from the Silver King, seated in a granic of into a the base of porphyy cones running in with a southwesterly direction tion at the base of the mountain range, capped with a quarkite rock of a the declar dipping with a relative to rock of a red color dipping under a lime formation that believe ones at the surface are none or them to shall of small veins and veinlets of quarking one, and where development has constanted and in the Crispin is on a small where development has been done on them to any development is no several feet. Buch is the case in the Crispin of the cone in the Crispin in the Crispin is on a small where development is now progressing. The shaft of the Crispin is on a small depth, and has entered a fine one progressing. The shaft was reached considerable depth, and has entered a fine one body. The fine and is about 900 feet from the cone in the King and silver this in character. In the range expending northeasterly about one and a half with a fine and as many of these properties and silver depth of the prosession of its veried features, and as many of these portines and such one on the contain or easting the many of these portines and such as many of these portines of the regard it unreasemable to consider the farmous silver king in character in all or tregard it unreasonable to consider the farmous silver king. In steam of the contrain of the same great fleat by the form the same great fleat by the form the same great fleat by the fleat of the same great fleat by the fleat of the same great shoots from the same great shouts of the such the language of the same great shoots from the same great shouts of the such the language of the same great shoots from the same great shouts of the such shouts from the seasonable to consider such same great shoots fro EDITORS TRESS:—. The following may inver-est the readers of your journal, especially those of an investigative and speculative disposition: The Silver King experts' pocket, egg-on-end, pipe, spring experts' proceed funnel mine of this Pioneer district, has developed mine of this Pioneer district, has developed

SAX3 the Portland Orcgonian. The coal mines at Newport, Goes county, are again being a depriving are employed, and numbers are applying are employed, and numbers are sent from California. It is the only mine export from Galifornia. It is the only mine export from Galifornia. It is described the portraing coal from Orcgon at present. The soft profit of the portrain of the portrain of the present of the portrain of the present of the prese

ALLEGED PATENT INVERINGEMENT.—The Eureke Schling ager of the Richmond Mining Co., began suit a few of the Richmond Mining Co., began suit a few days ago in the Ofronit Court of the United States, at San Francisco, against the United States, at San Francisco, against the Eureka Consolidated Mining Co., for an infringement of certain letters patent, claiming that he has an exclusive right to treat epieses in a certain manner. He asks for an injunction upon the final hearing, an accounting for the profits and for damages. Upon the other hand, that the alleged invention of Mr. Probert is without novelty, and also that the company way infringed.

SILVER MOUNTAIN MARELE WORKS.—The Salves of the new railroad around Slover Mountain Marele Wrade stakes to the new railroad around Slover Mountain Mountain Mountain Mountain and so the road will begin bave been set, and work on the north end of the road will begin to the new railroad around Slover Mountain be contined to track the Southern Pacific shall begin at its track and build south security and the southwest shopes of the mountain; that the California Jonatha shall begin at its track and build south security shall be mountain; that the California Jonatha shall be mountain; that the California Jonatha shall commence to construct at the end of the switch the mountain; that the California Jonatha shall commence to construct at the end of the switch the mountain; that the California Jonatha shall be mountain; that the California Jonatha shall be under the larges and in south the shall be used thire stone. The company is opining to the largest in the State. The company is one for incestone, and double kin for the largest, in the State. This work the larges and the workshop, in which will mestone to not only and operation, will mestone, one for incestone, one for incestone, and a fourth to building stone for the largest, in the State. This while the placed machiner who be incestone, will contain the street of the larges and the workshop, in which will be being made. The company is building stone for one to make the daylor to sevened as day for 125 days. To get out this stone will require the work of several large and any of 125 days. To get out the secone will require the work of several men in the street of the

A. H. Weber, who has previously acted as assistant to Prof. Hilgard at the State University, has been engaged by the United States Geological Survey to prosecute investigations in the northern counties of the State and report upon the petroleum, coal and asphaltum deposits of those localities. THE Mining Burean has received a communication from the Provincial Secretary of nunication from the Provincial Secretary of covery of a valuable deposit of platinum at Platt Granite Creek, B. C. The sample containt of platinum, 

Smoky District.

### Francis Scott Key.

palace of Barbeni for two years toiled upon Mr. Story went to Rome, and in the desolate structure of this monument was awarded February 7, 1885, and the eminent American sculptor, W. W. Story, was selected to design and construct the beautiful tribute of honor, and construct the beautiful tribute of honor. many attractions. The contract for the Colden Gate park, and add one more to its few days this monument will grace the tion of a monument to the memory of Francis Scott Key, author of the National Hymn, "The Star-Spangled Banner," In a Among the many handsome bequests of James Lick was one of \$60,000 for the erec-

his task. It is now complete and is in the vansitu to this city. Work has been commenced in the park in the children's play-ground, south of Conservatory valley.

The accompaning cut is from a photo-

graph taken from a model of the monument. The accompanying cut is from a photo-

The secompanying cut is from a photograph taken from a model of the monument,
bronze, while the monument proper is carved
bronze, while the monument proper is carved
out of travertine, a calcarcous stone, sometimes known as Tufaceo marble. It is a
reddish-yellow, slightly variegated with darkblue lines, and its durability is amply atteddish-yellow, slightly variegated with darkteddish-yellow, slightly variegated with darkblue lines, and its durability is amply atceddish-yellow, slightly variegated with darkteddish-yellow, slightly variegated with darkteddish-yellow, slightly variegated with darkceddish-yellow, slightly variegated with darkteddish-yellow, slightly variegated
cedeby St. Peter's Cathedral, at Rome,
safered by St. Peter's Cathedral, at Rome,
caste of preservation. Mr. Story suggested
asteed by St. Peter's cather in the Porta
ling the dag will be eight feet finish.

The monument will, perbaps, be one of the
tipe the dag will be little larger than the cut fast the
figure of America rests is a delicately beautiful droopne
the dag. The pedestal upon which
figure of America rests is a delicately droopinfigure of America rests is a delicately droopinbird of liberty and power.

The figure of Key is one of graceful penover her back. The pedestal upon which
bird of liberty and power.

The figure of Key is one of graceful penbird of liberty and power.

The figure of Key is one of graceful pensides of the monument will be four feet in
bird of liberty and power.

The philanthropist in making in serone
and on the other side is a fac-simile of the
stress as written.

The philanthropist in making his bequests
and on the other side is a fac-simile of the
series as written.

The philanthropist in making bird penebacters as written.

The philanthropist in making his enstress as written.

The philanthropist in making bird benery.

The cather the connerty, as well as his
gitts to science, charity as well as his

thereto was ruined would in itself destroy ownthereton and leave the public at the mercy of
the surviving carrier. This would not be desirable to the public, and it would work insirable to the patty whose desiness should be
ruined and capital ide. Competition is the
ours of high tariffs and competition is the
ruined and capital ide. Competition is the
preserved, not destroyed.

That there is another side to the question, and
that is the injustice done to shippers from or to
competing points. This is the evil which has
to cover the loss of profit on business done to
competing points. This is the evil which has
been competing points. The interests of interior points
looked to. The interests of interior points
looked to. The interests of interior points
comment rate to a competing points at a
contained rate to a competing point and make up
the loss by obserging "all the traffic will bear"
the loss by obserging "all the traffic will bear"
at non-competing points. The only way to
the loss by obserging will bear if
the loss by obserging points. The cution will bear if
the loss by obserging will bear if
the loss by the properties points. The only way to
the loss by the properties points. The cution will bear if
the loss by the properties points in the conjustice.

The conjugation of a maximum rate

The Long and Short Haul.

under the Oregon law to regulate railway budge Deady takes this ground: The rail-way manager "is instructed that he is authoramenable to the law constituted dissimilar our cames and therefore allowed such a road to cames access to a long hand there of the charge less for a long hand there if it were necessary to secure a share of the business. Now Judge Deady of Oregon has given a decision to the same effect and in harmony with a judgment which he pronounced from your the order to when a case onne before him under the Oregon law to regulate railway tailis. During the Wood River excitement in 1880, ears the Ketchum Keystone, while prospectors were scouring the mountains far and neer in their search for precious metals, Smoky neer in their search for precious metals, Smoky ton varieties obsisted and the best que seewied of the relimination of the law operation of the law operations The Interstate Commerce Commission took the ground recently that competition existing

operated, but with what results is known only to the proprietor, who, for over 20 years, has a rugged, mountainous section of country, and its isolation from all other places was for severities including the mines. With the addition of the district is located in vivolenment of the solid of the series a serious drawback to the addition of voloped, volopenent of the building of the place, ketching is and each state of the cally including of the place, ketching is and each state of the cally including of the place, ketching is and importance of the beauty of the district of the call of the cally including the place, ketching is and importance of the call of the to the proprietor, who, for over 20 years, bas gold hunters, and there is one claim, that owned by Mewton Rivers, which is still being operated, but with what results is known only district first came into prominence. Prior to that time the country had been prospected for phases: diggings with varying success by the fall of the country is one digging and there is one that

DONTRACT TOR IRON.—The bids for supplying sheets of iron for the monster pipe to connect the Crystal Springs reservoir with the city back the Crystal Springs veservoir with the city have of the Spring Valley Water Works assion. Of the several firms competing for the Spring was the corpression of the several firms compressed to the several firms competing to the Spring Valley when the committee of the specifications of Huntington, Hopkins & Co.—compiled with the section of the specifications to the section of the special section of the special section of the special section of the special section of height amounts to a special ing with alarm the long-hand clause. As the section of theight amounts to a little matter of section of theight amounts to a little matter of them of theight amounts to a little matter of the section, the competitors was sent and the combine of the special section of the section of the section of the delivery of the incompany at the contract was finally awarded to Holtonek, Morrill & Scheken for about \$400,000. The contract was finally awarded to the spring Valley (involvent the contract was such as the delivery of the incompanies of the spring Valley for the incompanies of the contract was such as the delivery of the incompanies. The contract was such that we was such the contract was such that we was such that the contract was such that we was such that the section of t CONTRACT FOR IRON.—The bids for supply-

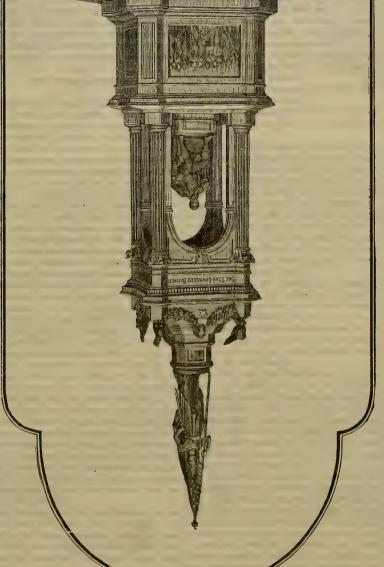
pattery and pan-mills on Sunday to test 'the hattery and pan-mills on Sunday to test 'the 'Desday 20 out of the complement of 80 samps in the mill began dropping on ore from the Conglituria and virginia mine to test the Dosa patent process of amalgamating without using patent process of amalgamating without using rectly from the ore crushings dows at rectly from the ore crushings dows at rectly from the batteries into the amalgamating man. Three of the pans in the California pan. Three of the pass in the California pan. 20 stantps. If the process proves a success, it will are now receiving the pulp from under the will result in an important saving in converting will result in an important saving in converting the pulling, and will admit of crushing the publing, and will admit of crushing the public, and will are now receiving the pulling, and will are now in grade to seem. The 20 stangs will be kept in motion until the machinery is in position to operating the entire 80 stangs in the mill by waternalist construction of the machinery is in position for operating the entire 80 stangs in the mill by waternalist process. MORE STAMPS.—The Virginia Chronicle of the 7th says: Steam was up at the California battery and pan-mills on Sunday to test the

An Important Purchase.—The purchase of the steam railroad franchise of Adolph Sutro by the directors of the Powell and Jackson street cable road has been completed.

The freet road has been completed.

The fraction and capital street for 25 cable from First sevence and California street for 25 cable from First sevence and California street for 25 capital street for a second avenue, and is grants the company the right to run a double track steam road through his lands along the cliff House. He grants them seemen to tor a depot at Cliff House, and extendible for them a lot for a depot at Cliff House, and a lotty.

They also receive the mile and a half of grading already done, The work is to be completed in the depot at Cliff Howell and a half of grading already done. The work is to be completed in Ам Імроктамт Роксная. -- Тhe ригславе об



Author of "Star-Spangled Banner." JAMES LICK'S MONUMENTWIO FRANCIS SCOTT KET,

THE PROPERTY OF THE PARTY OF TH

MANAGAN MARKATAN MARK

verses as written.

The philanthropist in making his bequests was anxious to leave some token of his was triotic love for his country, as well as his gifts to science, charity and education. His patirotic love for his country, as well as his gifts to science, charity and education. His mational ode. A monument to the own soul had been the inspiration of the gilted soul whose patriotic the American people, and had become an imperishable part of their literature, seemed to Mr. Lick eminently fitting.

Francis Scott Key was more than as a worthy the was an eloquent lawyer, and honored by the generation who knew him as a worthy in the city of Baltimore, and was buried in the city of Baltimore, and was buried in the Wount Olivet Cemetery. Years after a his grave by the Hon. George H. Pendleton, in the city of Baltimore, and was buried in his grave by the Baltimore, and was buried in marble slab was placed at the head of his grave by the Baltimore, and was buried in morthle slab was placed at the head of his grave by the Baltimore, and was buried in the first marble slab was placed at the head of his grave by the Baltimore, and was buried in the first monument to the poet, but they were unsuccessful. A bill was introduced in the Maryland Legislature praying the donation of \$5000 for a monument, but the massing the all the suitor of the "Star-Spangled Bannet" would have gradually faded from memory, but the massing of the suitor of the "Star-Spangled Bannet" would have gradually faded trom memory.

The recent kind and liberal act of Mr. W. Tick.

short one, in conjunction with connecting lines of the states of competition to adjust rates at any figure to the world for more than two years ago, Judge stranged some strength of the importance of the subject it is a stranged some strength of the importance of the subject it is a stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the importance of the subject it is stranged some strength of the subject it is stranged some sub

soon be a prominent ornament in that will could be a prominent ornament in our Coldense are Cate Park will not only keep alive the memory of Key, but will cause us all to sing with new fervor the immortal effusion of his patriotic heart. Lick.

The recent kind and liberal act of Mr. W.,
W. Corcoran in bringing home and turnishing an honorable buriat of the remains of lobn Howard Payne, author of "Home," was a noble and graceful tribute to the memory of one who had made so many hearts happy and invested home with a new charm. It refreshed the dear with a new charm. It refreshed the give a sweeter charm. The monument that will assert that will be a soon be a prominent ornament that will see a soon be a prominent ornament that will be a soon be a prominent ornament in our Gold-

W. T. DEWEY.

5th, Rzies and lower the spuds as the tances than is intended by use of the spuds.

yawa enastaib yns tnes to enidosm edt to ebis Discharge pipe enough goes with the outfit of that the materials can be discharged at the reduires.

to band edt rebau senigne to stes serdt edt ban through the discharge pipe any distance away, eft the entrance of the suction pipe, while the By the operation of the machinery the feeding released bring the cutter continuously against the bank, the cutter loosens it up and delivers .4091 0001 of qu

the operator in the pilot-house can each tailot the others and the others are the transfer of the artying conditions met in all dredging ti abnes bus tuo ti swarb qmuq lagulirtnec

The work throughout is of the most substan-

ing the many mistakes of operators during that tial character, and incorporates the experience-tial character, and incorporates the experience-tial 25 years in practical dredging efforts, avoid-

trance and safe anchorage for vessels of the largest class. The dredge is now on its way to its destination at Ballons in tow of the steambuilt by an incorporated company to deepen the harbor of that name, which forms a part of the Bay of Santa Monica, and fit it for the enessary to baild this. The La Ballona is & Bixler, the successful working of which encouraged the expenditure of the large sum built, owned and operated by Messra. Williams ealth legino sht nedt tast petter plant and Preliminary tests of the machinery show it to time in this class of machines.

Foundry Notes.

ecessary rock-breakers, etc. It was at first plant of quartz-milling machinery, some 400 tons in all, for the Union Mill and Mining Co. The Union Iron Works have completed a full

She has large passenger accommodations. vessel will ply on Puget Sound. 100 tons of plates on band and more are coming.

The new steamer Jubiles, for the Canadian Pacific Railway, will be launched in a few days.

She is 200 feet long and 45 feet wide on deet. ready and bent in shape. There are now about Charleston is progressing, but the keel is not yet laid. The steel angles and Z bars are all as the hull is repaired. Work on the cruiser heads and keelsons. The new boilers for the steamer Colima are ready to be put in as soon boilers put in and receiving new frames, bulk-The large steamer City of Peking is having new 08 will be started up first. This will abortly be sharted up first. Al  $K_{\rm L}$ , which has been thoroughly overbauled at the same works. intended to have 150 stamps, and the mill buildings are arranged for that many, but the of Aleska. The plant consists of 80 stamps, with batteries, etc., complete, and 32 concentrators, 16 Frues and 16 Triumphs, with the

made. The plan is new, and is expected to make a decided improvement in this class of found to raise one-quarter more water than the old style, An eight-inch one, with a water-wheel for controlling the valves, is now being inch one sent to Governor Stanford's ranch v ured on. The hydraulic rams made by Garratt & Co. are meeting with great favor. A fouretc., will be made a specialty here, and Rich-ards' patent hydraulic machinery, pumps, rams, etc., are the main features. Some very extensive irrigating solemes are now being fig-nred on The braitzulig rams made by Garratt Water-works for towns, irrigating machinery, gating plants, etc. The demand for bydraulio machinery has largely increased of late years. The demand for hydraulic hydraulic machinery, such as pumps, rams, irrino si salrow wen eset these new works is on ing touches on the offices and warehouse. ing used. The painters are putting the finishtools in the machine-shop are in place and beno heats have yet been made. Many of the place and the pattern-makers are at work, T. Garratt, on the corner of Bryant and Fifth streets, is approaching completion. The two water-jacket furnaces in the foundry are in The new foundry and machine-shop of Wm.

City, The well is to be sunk above his orange orobard and vineyard, at an elevation of about and after some prospecting, has let a contract for boring for gas and coal oil on his ranch in Partola valley, about five miles from Redwood S. L. JONES, induced by surface indications

> young men and women of ability should consider. This branch of engineering is one that women can take up if they choose to do so. engineers, experts in their line, there are not many in the country. The subject is one which ficitose less to tud (Vilsioses riedt ai taeiofi power. In this oity there are very few persons engaged in this profession. There are several who take up special departments, and are prosid ni noitemuolni vas medt evig yllulteedo

The New Dredge-"La Ballona."

and effective dredging plants ever made here, which they have christened "La Ballona," It Works of this city, one of the most complete ed, by the Golden State and Miners' Iron t Los Angeles Co. have just had manufactur-The Ballona Harbor and Improvement Co.

inoh square timber, and built solid between the keelson timbers and the deck. e length, and two cross bulkheads, all of 12ing. There are two bulkheads running the endeep over all, with heavy frame, well kneed and covered with four-inch thickness of plankknown in dredging ciroles as of the Atlas class. The hull, made by Alexander Hay, ship-builder, is 95 feet long, 40 feet wide and 9 feet is of the suction or centrifugal pump type, and

runner, and is set upon foundations below the pump, The pump has a five-foot diamet inches wide, transmits power to the centrifugal edjustable out-off; and a 7-ply rubber belt, 30 20-inch stroke, Corliss style, each with Myers' The power is supplied by two tubular boil-ers, 54 inches diameter by 16 feet long. There are two main or pumping engines, 14-inch bore,

nany of the turns and angles that heretofor of the water, on a line with the bottom of the pump, and thence upon the ladder and out to the outter by the most direct lines, avoiding The suction pipe, 18 inches diameter inside, mes in the end of the hull below the surface level of the water outside.

from the outter is a framework of steel, six inches have obstructed the passage of the materials

by one moh, with spiral steel knives the entire

gregate of outting edge about 100 feet in length length and end, forming an instrument eight feet diameter and six feet long, having an ag-

ladder and connected by gearing, counter-shafting and line shafting, to the cutter at the cuter or lower end of ladder, and supply power to act against the surface being excavated. Two engines, 10 inch bore and 12 inch stroke, are mounted upon the inner end of the

Two engines, 8-inob bore, 12 inch stroke, are

connected by a system of gearing and friction so accomplish the work of—

which the machine swings, let, Riising and lowering the spuds upon

2d, Raising and lowering the ladder with ite

outter, enotion pipe, engines, shatting and gestring by which the excavation is done. 3d, Veeding the machine from side to side

reach the materials to be removed. ot each si gaitsveoxe ethe tanisga

cut to any line desired against any current or or required distance or to swings in outting, and enable the operator to cest-iron spud pipes that go through the hull. These anohor the machine in any position desired, form a center upon which the machine near the side of hull, operated through heavy of bull and in its center; the other abreast, but There are two spuds, one near the back end

genions system of levers, one operator can-let, Handle the main engines that do the Above all is a pilot-house, in which, by an indining-room and state-rooms for those in charge. house on deck, which also includes a galley, wind or tide influence.

The machinery is inclosed in a substantial

ting engines so as to adjust the amount of ma-terial brought to the entrance of the suction 2d, Hasten or slacken the speed of the cut-

end it sahore.

3d, Raise or lower the ladder with the cutter ot sengine gamping entires to the pumping engines to

work from time to time may be done. so as to adjust the cutting capacity to the changing character of the materials in which

erom tuo ot ebie to ebie mort enide and

Forgot About the Mines!

ano to douborg and ton ad it is nablog ballao ers is tadW ? seconness! sentential still of the ed of ot belitine si tadt estats eft though to de they may be dropped out entirely from a summisleading, the subject had been ignored altogether. Why call this a "Golden Singer is it our gold mines are of so little account, that mining industries. Better than a statement so ne entertained a purpose to burlesque our bad exect seeppose there had a prose there had of the bullion they have produced, which statement, strange to say, is so grossly wrong gold and silver mines except a bare statement tuo do spam moitnem yna si sisisnoo dood sidt so little eaid in this pemphlet about our gold misse satisfies as to make the title seem almost a misse momer. Nowhere in the 65 pages of which money. Mowhere is any mention made of our s in the Golden State of California," there for advertising the various resources of Cali-fornis, Though entitled "Homes and Happigotten up and published by the Central Paoific and the Southern Pacific Railroad Companies We have been looking over the pamphlet

Ground Telegraph Wires, Activation of Connibus, SB Connib say anything on the subject. The situation be-comes awkward when the playwright, through ing a danger that he will otherwise neglect to preparing the manuscript for the next edition of this work de instructed on that point, there depublic. Let the man charged with the duty of prices, it is to be hoped that the reliving a people will give it a place in any future pamphlet they may need to the callenguage of the good a standing among our reputable indusas growing squashes and potatoes, or even wheat and the other cereals. Maintaining still so average 25 per cent at least. Commercially considered, therefore, the business of mining continues to be respectable, almost as much so \$19,000,000; the clear earnings on which will Motes, 83.

Miners, 87.

Miners, 87.

Miners, 87.

Miners, 87.

Monument, 67.

Maricore, 10 of 1 will amount for the current year to about same time large. It is estimated that the value of the gold and silver produced in California net profits realized on this output being at the ceeds by three or four times the value of any other of our staples, wheat only excepted, the material wealth. The output of our mines exa work purporting, as this does, to tell the world all about the many attractive fields that open here for labor and the various sources of our not a little to see the business so overlooked in an seeirgrue it that it there to or transco and no It has been so much the habit of writers thought that mining for the precious metals was still a business of some importance in Califor-Until looking over this pamphlet we had ? stisoqeb suoreitrus

The New Profession.

oipal character from the play; moreover, such omission is apt to embarrass the actors.

nadvertence or ignorance, leaves out the prin

oncerned, Of course there are many in ing, which profession has not yet become over In England, college graduates and educated young ladies are studying electrical engineer-

ducation in electrical matters. lights, shows that there is a necessity for more to amrol tneveltib to gaidtemos wond bluods ports, showed that he was utterly ignorant to the whole matter, and had besed his reasons for his action on false premises. The fact that sid to Gmoral was the city Gas Inspector, and blunds the was the city of different forces of trical engineers here, who were called as excise the electric light system, and the few elecweek when a public official attempted to critipeople on the subject of electricity. A marked example of this was shown in this city this ventors and many experimentalists, as our patent records show, but there is a lamentable ignorance displayed by the majority of the neering, as far as making a profession of it is crowded. In this country comparatively little attention has been paid to this branch of engi-

ally but aurely widening. Up to a few years
ago the telegraph and electric light were the the other day to examine some new properties 80 stamp mill with necessary concentrators, etc., to Alaska. Experts for the bonanza firm left

ap in that Territory. The Alaska mines are turning out very well and more are to be de-

No. 4 of \$10,000. This makes \$40,000 that has quertz mine, on the Middle Yube river, nearly opposite Moore's Flat, have received dividend

THE stockholders of McKillican & Co.'s

We note this week the shipment of a large

dries and machine-shops than has been the case

denoes of prosperity are shown on every hand.
There is more work on hand at our local four-

fornia the prices of land have advanced and evi-

visit this State from the East in a few months, and many will come to settle. All over Cali-

happened on the Cometock for many years, il men having lost their lives.

were finally found, but they were all dead, and from all appearances were suffocated soon after

The miners who were so vigorously sought for in the depths of the Comstook for two weeks

Passing Events.

Business Announcements,

tann, Now Moxico, Oregon, Utain, Woming, 40-41.

MINING STOOK MARKET—Aske at the San Francisco Stock Board, Notices of Mostlarg, Assessments, Dividends, and Bullion Shipments, 44.

les, Monument to Galiloo. 38. – Rocht Building: The Building: Building: The Brock Care of New York; A Steam Wagon; Undorgroup The Galiloop (The Care of New York; A Steam Wayon; Undorgroup Witee; Acrial Mayigung Undorgroup).

MECHANIOAL. PROGRESS.—Combustion of Color, Wolding and Tombering Spring Larves, A Price Coop, Wiels A Blackenith's Mice Brush; Steam Bell Ringer for Leconorthyses, American Rechinery Bell Ringer for Leconorthyses, American Rechinery Bell Ringer for Leconorthyses, American Rechinery Bell Ringer for Leconorthy Sec.

EDITORIAL M.—The Alice Gold and Silver Mill, 3S.
Pessible Events, Forget About the Mines; The Vow
Profession; The Yew Predger, "I. in Esilonsic Coundry
Minest, 3G. African Dismond Mining; The Enfombed
Minest, 37.

TABLE OF CONTENTS,

Saturday Morning, July 16, 1887.

SAN FRANCISCO:

SCIENTIFIC PRESS PATENT AGENCY

Entered at S. F. Post Office as second-class mail matter

Our latest forms go to press on Thursday evening.

be paid for at the rate of stone will see the rate of stone of the see the see the see the see that the see th

Terms of Subscription.
Annual Subscription, \$3. New subscriptions will be declined without cash in advance. All arrearages must be paid for at the rate of \$3.60 per annum.

M. B. EWER..... Senior Editor.

OHee, 220 Market St., V. H. cor. Front St., S. F. O. Portes St. 28. F.

**ВЕМЕХ & СО.**, Publishers.

SCIENTIFIC PRESS.

PUNIME

A. T. DRWET.

T. W. B. BATERT SOLIOITORS. G. H. STRON

SOIENTIFIG PROGRESS.—The Wonderful Dollo

See Advertising Columns.

Quartz Scroens—California Perforating Screen Co. Frield Sommery—His B. G. frinox, Onkland. Assessment Voltoc—Norris Beer Preserver Co. Mine Surveyor Wanted—B.

Iliw elqoeq basanody yaam tadt betoeqxe ei tl

This accident was the worst that has

for some time.

thing points to renewed and substantial pros-TUSOARORA has but few idle men, and everyrecently been distributed as profits.

The field of usefulness of electricity is gradu-

azina ilu diw ensem on yd si doidw e who now fit themselves to serves as selectrical bars nor other and selectrical bars of the server of for many purposes not thought of formerly. Expert knowledge concerning it is in demand, and will be still more so in the future. Those bas shaid suciter to stotom tot besu gaied si t principal things to which it was devoted. Mow

Wr. Fred H. Greer, Station E, New York, less against the bank as the observater of the ordered and vineyard, at a materials admit, and also in moving the ordered and vineyard, at a machine backward or forward over longer dis- 760 feet above tide-water.

4th, Handle the warping lines in swinging

## The Entombed Miners.

pipes from the compressor were extended and pure air blown in. Miners went in, but no

THE San Diego Union says: D. L. Ferne.

At a point in the main drift, about 100 leest worth, ex-Supervisor, and one of the heaviest morth of the 1500 station of the Bonner shaft, transfer contractors in San Francisco, arrived the searching party came to an old unused

trace of the missing men was found in the corocaded south-orescut. The party then proceeded south-ward along the main 1500 north lateral drift. found. The air was very bad, but after a time it was expected the entombed miners would be Early Saturday morning of last week the rec-oung party broke through into Mo. I west crossout of the main morth lateral drift on the 1500 level of the Best and Beloher mine, where the standard of the best and Beloher mine, we have

wol oot to si ti and common of the world oot post is the common of the same of the common of the com

grade to pay sost of working. On the west end of the Kimberley mine, there is also a low-grade dismond-bearing deposit.

anoiteoibai ot gaibree and Maybert. The oamp is to be known as "Ormonde," meaning "Voild of Gold." The Weshington mine has a promising future, so-

THE Grees Valley Midiage says: A new town to apringing up near the Table and appinging up near the two of that name on the two of that name enormons (quantity of shale (4,679,000 cubic yards) to be removed makes this method too expensive; and, besides, sooner or later the hard rock world give way and the mine be

filled with buge masses of exceeding hard rock.

The "blue" ground could then be mined by drifting and stoping. The greatest difficulty the mine and drifting to the "blue" ground. to ebistae banory bilos eds ai estesa gaidais The other method of working the mine is by

boboodmills, and minerals, all imboboded as a more over the same of indurated tale, or rook of shake man free. Large masses of " floating" shake over rect are found imbodded in the " blue," also bassitio in the way of close mining is the searchity of timbers and other lumber have to be brought from the Baltic or from America. eince the mass is composed of angular pieces of black shale, irregular pieces of mica and several The diamantiferous or "blue" ground is a hard, dark, greenish-blue coment, which re-quires to be blasted with dynamite. It might The cost of removing this, should it fall into the mine, would be very great.

boulders from one foot to many feet in diame-

Fig. 1-Section F-DE BEERS DIAMOND MINE.

2000 tons of pipe to be used in building the sewer system in this oity. pipe, and when that contract is concluded Farns, worth will start in on the contract of hauling In whatever manner the dismonds may have the smallest number of timbers possible, out the steamship Santa Rosa with teams and originated. They could both station, There is 3000 tons of great, owing to the extreme hardness of the works at Mational City. There is 3000 tons of great, owing to the extreme hardness of the works at Mational City. There is 3000 tons of great, owing to the extreme hardness of the works at Mational City. There is 3000 tons of great, owing to the extreme hardness of the works at Mational City. There is 3000 tons of great, owing to the extreme hardness of the works at Mational City. There is 3000 tons of great, owing to the extreme hardness of the contraction of the

REV. JOHN SCOTT, the aged father of Irving

M. Scott and Heury T. Scott, of the Union Iron Works, died in Oakland on Saturday last

for a bridge across the Straits of Carquines. THE reilroad officials will soon make a survey

Fig. 2-Section G-DE BEERS DIAMOND MINE, SOUTH AFRICA.

C. H. Aarou, the well-known assayor, and author of several works on metallurgical sub-jects, came to this city from Mogales this woek.

THE camp and complete outfit of some pros-Mr. Asron is on his way to Gentral America, where he is going, in the interest of other par-

In the article on the Mulates mine, published in another column, wherever the date 1885 appears it should read 1866.

depth of stay 200 feet, because the mine is several shafts and sent to the surface and sent to the surface of stay 200 feet, because the mine is several shafts and sent to the surface and sent to the surface of several shafts and presents some features as soon as several tramporal states of the surface of several shafts and presents some features as soon as

" Blue" ground was being hoist-

mottod edven shall been sunk in the bottom debris of the previous year had been removed

ne in Angust, 1885, nearly all the falle

depth of 600 or 700 feet. At the Kimberley

a ta door gairsed-bacmeib edt gaislists to weiv

cut the hard rock, and could be run with the rock. In my opinion incline shafts would be much chesper. The inclines could be com-menced at the point where the vertical shafts

worthy of mention. Attention is called to the sections Figs. I represents the min at the year 1883, Fig. 2

upon the hard rook remaining in place when exposed for several hundred, feet in depth. The

The friends of this method are relying moval of the shale to an angle of safety, so that it would be impossible for it to cave into the Two methods are now advocated for working this mine. Many cling with pertinacity to the old open-mine method, and advocate the re-'eurm

> namely, by open quarry, was The original system of min-ing the Kimberley ground,

> Methods of Mining. while in another the majority of stones will be yellow.

> more imperfect; in one part the stones will be white,

er part the crystallization is ootsbedross, while in anoth-In one part of the Kim-berley the stones are perfect

color, size, ovestallization, black spots in the ovestals, and the amount of broken or irregularly shaped pieces, called "hore".

The peculiarities consist in

senote to tol a ecalq doidw

mine. It requires no great morn enime trom

ai tad sonim ana office of the same out to straig distribution of the same of

ton shnomaih to visitav edt

there is but little doubt.

tiferous material occupy the contest of former volcances

That the masses of diamanmore natural in an aqueous.

dismonds themselves, the presence of which seems

second, the existence of the

bas ,bauorg ground, and,

are, first, the pbysical ap-pearance of the mass of dialeifed sids tot snosser yld

secasolov bum to enntan edt

ni gaidtemee of Vidissograther than igneous agencies

ancoupa of oub saw stisog

and a special of the formation of the Sairsed-basement of the sairsed-basement of the sairsed of

I am, says Mr. Williams,

-sh eds evoled tetro to ani

which surrounded the openter. These are, without doubt, portions of the rock

properly be called a brecciated rock or cement,

Description of the "Blue" Ground.

[No. 4-CONTINUED.]

SainiM baomeld asoirla

One fact deserves special mention, namely,

showing that they are not in their original po-

sponding pieces are not found near them,

found. Again, a great many fragments of broken diamonds are found, and the corre-

ing the "blue," as might be expected if the diamonds had crystallized where they are

they now occur. No diamonds have been found either in the shale or in the hard rook surround-

called " bort,"

have been taken.

resoulng parties for their beroic efforts in en-deavoring to find the enfombed men. Several distinguished themselves greatly, and steps will be taken to suitably honor them. Great praise is rendered to the miners of the families. Many of the mining companies of the Cometook subscribed liberally, as well as nu-merous individuals. The bodies were removed from the indie, taken to the undortakers and placed in coffine as acon as possible. The entended miners were Edward Jeffrey, Martin Tregallis, Peter Eddy, John Kennedy, Ches. Dougherty and Foster Hamilton. The funcaris of these victims took place on Tuesday, when mining on the Compatork was generally suspended. Some \$25,000 has been subscribed as a relief hand for the families.

o arow ent at begaged in mem removed had a very disa-greeable and ardnous duty

tender that great care was necessary in handling. The

still soft, and the flesh so rested on the ground were

shriveled, those parts that bus being had defed out to nel. Though the faces and the skin of the upper parts

aus ortug out diw tooun from the old drift to 1700 level of the Con. Virginia, where there are drifts that

awob abast tast exain ent to evae gid a yd beqqosa need teel 371 os 031 suoda nidsiw

the bodies lay within a space of about 20 feet. They had

ination, they found that all

them to make a close examylqqua a beauces bad sranim eldane of faeloihus ria lo

When the men at work for the recovery of the dead

Bonner shaft, where the fire

and the loop in going south of the to the loop of the

The searching party found

narrow one, and to remove the timbers must have cost the men much labor.

which they passed was a very

of diet. The hole through tanoma eldarebianos a beliq

the bulkhead and crawled into the old drift, against which, on the inside, was

or two of the top timbers of

been used to carry water. The men had removed one

et parts baving evidently

buckets, the bottom or buck-

the top parts of four dinner a truck, and here were found

brought from the station on Here they found a water barrel, which had been

which a portion of the bulk head had been removed.

drift from the month

line into the edge of the Con. Virginia ground.

from the Gould and Curry mine through the Best and Beloher, and northward soross the

were found in the old Ferguson drift running

After more search the bodies of the six men

timbers still standing, though much obarred and blackened by the flames. The glant pow-der stored there had been consumed without exploding. Had it exploded, everything in the vicinity would have been preceded.

violnity would have been wrecked.

days without food or water, have been found near Oak Grove, in San Diego county. pectors, with cooking utensils, blankets and a couple of mules, who seem to have been several

and position of this rock were determined by a test shaft sunk for that purpose. On the west Section F. Fig. 1, shows the same hard rook that surrounds the Kimberley deposit. The nature a depth of 460 feet from the original surface. oressed to 330 feet. A shaft has been sunk to depth of the mine at the end of 1883 was 300 feet. During the year 1884 this depth was inrepresents the mine at the end of 1882, and the broken line in the "holne" represents the mine at the end of 1883. The

reef, readered the coef or mining very great, and also prevented the mining of the "blue" for months at a sime in the covered parts of the voor dratage "freet," and the almost containt covering up of some part of the mine with fallen

Beientific Progress.

Psychic. The Three Forces-Physical, Vital and

[Written for the Press.]

The Correlation of Physical Forces.

the mount of the complete of the confidence of t

Vital Forces

Muscular Force Within the Living Body.

Gir William Strong, in his address as president of the British Association, 1863, said that dear of the British Association, 1863, said that dear of the British Association, 1863, said that meet the third of the order of the present century." What led to this discovery of the present century." What led to this discovery? Chemists held that mether century of the stands as no particle of matter century and services and as no particle of matter century and services and services and meens "mutually convertible." He says: "Light, hear, electricity, magnetism, motion and hear, electricity, magnetism, motion." Light, hear, electricity, magnetism, motion and hear. Their relations were first established the effect," Let us take as an example motion the end hear. Their relations were first established the effect," Let us take as an example motion the end hear investigation he found that the amount patient investigation he found that the amount of the molecular motion which has to be added to a hough of water in order to hear sectly qual to the molecular motion which must be degree Fahrenheit. If we call the schuld near the cannot of the molecular the order to hear energy of a body weighing one pound, which has a boing of the mechanical quiral bath of the mechanical quiral serving with a volosity of 19 miles a second, would etrite with a force of the order of the second, would etrite with a force of the serving with a volosity of the mechanical serving with a volosity of the mechanical serving with a volosity of the mechanical serving with a volosity of the second, would etrite with a force of the serving will converted into the end of the second, would etrite with a force of the second, would etrite of heat a force of the second, world etrite with a force of the second, world etrite of the second, world etrite of the second, world etrite in the condition of the end of the end of the

A FINE STEEL WHER—A fine steel wire, when taken from the property of the steel wire, when taken from a coil and forced through a city that a coil and to read the steel will be a groove out in the form of a screw thread, makes a very attractive sight of an extractive staff in the steel staff of the staff as a fast as it beaves the machine, each length long spiral coil. The wire is cut up into equal long spiral coil. The wire is cut up into equal lengths as it leaves the machine; asch length the die, braiding it into a mat that can be used form. Another tery pretty device for an extreme and divided into three sparts, radial stone, at one of the whole the ling stone as to get a grip on the whole thing the machine are interesting device to show to the public. An easy, simple method of securing public. An easy, simple method of securing strated adjatement, are features that it is only on the strated only only the staff and into any property and into the staff of the can interesting device to show to the public. An easy, simple method of securing strated adjatement, are features that are decirion with free and nurestrated in every extension joint.

reached. The wedge pins inserted are to make up for loss in scaling and welding. File and finish the broken lest and fit to the next one, and while still red-hot cool off and heat black-hot until the steel will make a soft pin and your broken lest will be quite as good as a new one."

the art space of your graveness, you will the content of alse lining carbonic oxide gas up the chimney.

Afth. In ordinary boiler furnaces there is an insufficient supply of sir; fresh coal is put on the graves and the firing doors are closed; gas and enough to ignife the gas), how can you expected on not furnish air above fire (and it must be hot door not furnish air above fire (and it must be hot not furnish air above it is a specied or a for supply of sir, words, it does not burn properly, and your boiler furnace is nothing enote than as a gas weeks, making crude gas and westing in open words, a first class ages works, making crude gas and westing in the constructed they up the chimney; in other words, a first class are nothing else than gas producers—that is made, and make holler furnaces are constructed they you shovel a quantity of cost, which flames and there is a red-hot retor to reylinder into which when it is full of cost you shovel a quantity of cost, which flames and sanches viewed. One should sing off the supply of air and extringuishing the fame. (as is and exprise in a single off the supply of sir and extringuishing the pere words. One is a furnace of the difference becomes along pipes to be purified and stored. You perceive at once that the difference between a perceive and an ordinary boiler furnaces with closed doors and half-choked gratebars is not very great.

The following, in the same direction, is given the supply of the same direction, is given by the company to be pured by the peans and part of gas played by the peans and part of gas produced. Your provers and an ordinary being the peans diverse. Considering the great cost of fact on the control of Order of the construction of of steam, she following facts must directly of steam, she following facts put forth by Mr. Upton should be read and considered with interest by all parties read and considered with interest by all parties lark great and seed is distilled into gas before it lark to burn this gas a sufficient supply of the gases below their of low enough to cool the gases below their of low enough to cool the gases below their of low enough to cool the gases below their of low enough to cool the gases below their of low enough to cool the gases below their of low enough to cool the gases below their of low enough to cool the gases below their of low enough to cool their of their of their of the structure of the gases greatly diminished, but at first space of the greatly diminished, but at first the evolution of gas extrally check; the draught; but bear in mind that, although no means follows that its combustion is perfect; the air space of your gratebare, you will be merely distilling earbonic oxide gas up the merely distilling earbonic oxide gas up the chimney.

The structure of th

STEAM BELL RINGER FOR LOCOMOTIVES.—An apparatus for ringing the bell by steam has apparatus for ringing the bell by steam has been placed on several of the passenger engines. It consists of a small steam cylinder placed at consists of the bell-frame and resting on the boiler. The connecting rod, which connects the piston to a three-inch crank on the bell, is so constructed that it will vary its length actoring to the swing of the bell, thus removing the isbility of knocking the cylinder head out by the piston coming in contact with it. It is manufactured by Cooke & Strong of Danville, Illinois.—Raikway Journal.

AMERICAN MACHINERY IN IFALY.—The Unite of States consul at Milan, Italy, reports to the States Department that American machinery has a high reputation with the Italians, especially hydraulic wheels, turbines and windmills. It such is the case, it might be a profitable movernent on the part of our machiness to look into the ambeter, and if it has a substantial existence try and make some arrangement for a representing matter, and if it has a substantial existence try and make some arrangement for a representation on the string, and the literations it when the is too short for an exhibit of this or increase of the string, any Italian mext May and Inner or its sign of the sind, and its of this chines are also and a substantial machinery should not be lost sight of. Амевісьи Маснічеву ім Ітагу.-Тре Unit-

THE IRON BUSINESS.—There are signs of un-precedented sotivity in the iron business, that unfailing barometer of commercial prosperity.

For the current year 21,347 miles of new rail-road baye shready been projected, and the lay-ing of over 15,000 miles of old track will mated that fully 18,000 miles of old track will be relaid. To supply this demand will require 3,250,000 tons of steel rails. From the above figures it will be seen that the iron trade for figures it will as seen that the track any former period.

Arching Over Boilers, allowing at least 15 or 20 inches space between the boiler and 15 or 20 inches space between the boiler and externable will protect them from any exterior learness over the boiler, and say leaks from the shell of the boiler can be seen by looking under the stell, The arching will have a great tendency to dry the steam.

IMPROVEMENTS IN PUDDING. An new pudding process is on trial in Pittsburg, by which ding process is on trial in Pittsburg, be used to be and a montes of nest. The use of nesting receive at possible to produce an even heat over the whole of the large chamber which is subtractions.

FLUSH LUBRICATION,—The flush method of lubrication is the flushing of oul from the cup by water of condensation and uniting it with the oil in passing out, which forms a compound of a soapy nature that is claimed to be better than oil alone, one-half the oil being saved by this compounding.

MONUMENT TO GALILEO.—On the 21st of April, on the observed of the April, on the occasion of the anniversary of the founding of Lome, the municipality of the Elerthonian of the anniversary of the near Calileo, consisting of a column erected opposite the palace of the French embasey, wherein the illustrious satronomer was imprisoned in 1632. The column bears the following inscription in Leslian: "In the neighboring palace, belonging at the time to the Medicis, was imprisoned earth revolve around the sun. S. P. Q. R., Abilieo, who was guilty of having seen the earth revolve around the sun. S. P. Q. R., MDCCCLXXXVII." The Syndic of Rome was inversely and oration. The University of the was represented by Assessor Tommassini, who delivered an oration. The University of Rome was represented by Assessor Tommassini, and the Academy of the Lyceid and oration.

BACTERIA IN ICE.—Dr. T. Mitchell Prudden or J. Merchell Prudden experiments with a view to determining the effect of Idew York has been making some important feet of Idew York has been making some important feet of Ideexing on backeria. In the case of the factor in the case of the actering a factor of the set of the case of the strength of the factor of the strength o

Ince were just perceptible, when the souther statement of the spectroscope, when were just perceptible, when were just perceptible, alloys of aluminium are the alloys with copper. These form a striking series, of which the alloy of 10 per cent of aluminium and 90 per cent of copper is the most prominent. This compound opposite were soon percept as 1856, by JN., John Percy, and its wonderful properties were soon partly recognized, and it received the name of partly recognized, and it received the name of partly recognized, and it received the name of partly recognized, and it received the among partly recognized, and it received the name of partly recognized, which has subsequently been extended to other compositions, more canton to rollers is stated to have given much better results than ordinary pronze, it was never made in appreciable quantities until shout 1867. Aluminium may contain 10 percent opper and still retain may contain 10 percent copper and still retain most of the mach better results than ordinary pronze, it was a spellow color, and it is probable that the change in tint occurs at or about 82 percent changinium bronze poscent. The 10 per cent aluminium bronze poscent and the per cent aluminium pronze poscent al

The Wonderstruments has just a more recording to the continued.)

The Wonderstrument of the decision of the Sense of smell. Deen completed by Dre. Emil Fischer and Fense of smell, and fense sompleted by Dre. Emil Fischer and Fense sold fense somplete day Dre. Emil Fischer and Fense of smell.

These chemists used mercaptan and chlorphenol mented in a room of 230 cubic meters expectly. A gram of the substance was dissolved in a gain office of some of 230 cubic meters expectly. A gram of the substance was dissolved in a gain office of the sense of the substance was dissolved in a gain office of the sense of the substance was dissolved in a say the fact of the common of 230 cubic meters of the substance was dissolved in the sax of the substance was dissolved in the same of the room, the the experimenter to all parts of the room, the condition was encounted by the independent observation of a third percepted on the substance of the room and took by the independent observation of a third perception of a factory observation of a third perception of a factory observation of a third perception of a substance of the room was controlled to the same of the room was militeran of mercaptan of samiligram of an independent observation of samiligram of an independent observation of samiligram of an independent observation of samiligram of samiligram of the one of the resperiments upon the second calculation of the same of the spectroscope, when the sodium inces were just perceptible.

Althurum Allen and the substance and important important alleges of the spectroscope, when the sodium preservation of same interpreters.

Mervous Force is not file steam engine.

Mervous Force is not electricity, has been ahown by Du Bois-Reymond; its speed is shown by Du Bois-Reymond; its speed is only 97 feet in a second. In his opinion, the molecular polarization, like magnetism; but Marshall shows that this force is as analogous foo electricity as is magnetism; not electricity along a fact that the transmission of electricity along a fact that the transmission of electricity along a nerve will cause the contraction of the more imported by the contraction of a muscle is except, while shows that the contraction of a muscle is extent fact that the contraction of a muscle is extent fact that the contraction of a muscle sie only along it leads, but also by the more important of a muscle of the more important of the more important of the fact that the contraction of a muscle sear fact that the contraction of a muscle of the fact that the contraction of a muscle of the fact that which could take place only with a stimutus olderly allied to electricity."

Its closely allied to electricity."

muscle in contracting does work, is less than when it effects nothing;" and finally, muscular vainly endeavoring to lift a great weight—takes the form of heat, a result deducible from the law of correlation of the steam engine.

Is not correlation of the property of the factor of t

Muccular Forces Within the Living Body.

Miccular Forces Within the Living Body.

Licipig, in 1842, asserted that for the processor deceived into muccular force the food must first be vere also held by Draper, Flayiair, Hanke, Odwarer also held by the products of dation of its own abstance, aince the products of this maccular force cannot come from the oxidation of the own abstance, aince and an annual factors of the products of this way was a servation.—Voit, E. Maith, Rick, Dyberger, E. Smith, Rick, Willer an English of the work done of these oxidate of the work done. Here we have the postation the territor, the smount of ashore of mesers of massers of the work done. Here we have the potential by the intermediate at the exact fore the most connected into motion. The sample of the work done. Here we have the potential by the intermediate and motion of the work done. Here we have the potential by the intermediate senge of heat.

This is accomplished directly; muscle is therefamical to the work done. Here we have the potential by the intermediate at the consumed is the ten only man is one opportive ded.

This is accomplished directly, muscle is therefamical to the work done. Here we have the potential payer to one the work done to the work done the work done to medicine one of the food above the most one of the sain the ten one of the the sain that a mouth energy appears as a mechanical power, one filth of the heat; therefore, when a muscle consumed is not bear as a mechanical power, one filth of the sain annot nearly appears as the sain and the Mechanical Chances.—One of the remark-able mechanical changes of the day is the set-ting saide of steel and the readoption of iron for some of the most important wearing parts of locomotives on many railroads. It is not many years since the change was made, on most roads, from iron to steel.

is not a good showing, I would like some of by your readers to get up a better one.

Welder of the Wagomager acts of get up a better one.

Welder of the Wagomager acts of get up a better one.

"What is the best way to mend hoken spring leaves, and ought fat he same to be tempered after which is the best way to mend hoken at follows:

"I suppose that there are about as iollows:

"I suppose that there are about as iollows:

"I suppose that there are about as many ways modation aske, iried about seer hold of seer he dear which I now describe as the best: a modation aske, iried about seer he best in the spring had a little borse on the ends which are modation aske, iried about seer he best: a proken the wind the case on the ends which are broken the best in the seer of the best: a best in the same which do so the same wide punch holes in a bout one and short, and the leafs is over one and process of the broken less of the broken less, the lay on the short piece, and lead of the broken plate. Then it well a broken and set little same wide best in the fere. When the other make senter of wedge-shaped and of which holes in the fore plate, then by on the short piece, and less in the senter of which do, and then treplace in the fore of an end with the blate. The nivets will be warm enough by this time to bend over, will be warm enough by this time to bend over, which do, and then replace in the first of the other and of the order of one only and lessly bores of one only, and wedge conform to both parts of the plate, the surjing point, and with quick successive blows, welding point, and with quick successive blows, one only well in wear the less of the treath of the surjective of the order and weld on the date that only and when thoughly welded on the date they one when engages training when a surjing some will well in east the less of the plate, in the order of well in east the less of the surject of the order and weld to be by the edges and swee and weld engages and splate. I long soney have a segmin and weld in the les Method is to run as heavy a fire as my faceboard of Hendling Fires:

Method of the begt under the bridge-wall, and not by defeat out with case and as teeboard. The control of disturb it more than once in a feel of disturb it more than once in a teel boar run, then clean out with case and as geedly as possible, dress light and let it is control of the west light and let it is control of the west light and and let life. In the morning I open and govern by the dampers. I do not though a fine until 3 or 4 o'clock in the attention, and the mail 3 or 4 o'clock in the attention, and the mail 3 or 4 o'clock in the attention, and boiler enough to do the work easily and not the work in this way it is necessary to have the forther thing, it is necessary also to have the boiler set right to be have to dive to the work easily and not gim with. The one I have a fer right to become to the under aide of the shell, and is greeblar to the under aide of the shell, and is gim with. The one I have to be shell, and is running 500 pounds of scennings to make it is not a good shower by measurement. I would like some of your readers to the work. I would like some of your readers to the work in the second of the work only. If this is not a good showing, I would like some of your readers to the Westperno Sprace.

very great.
The following, in the same direction, is given by a correspondent of Power who has had much experience, as his

Experience, as his

Method of Handling Fires:

Combustion of Coal,

MECHANIGAL PROGRESS.

biliousness of spring. In the latter case the juice should be taken before breakfast. The juice should be eaten, avoiding every particle of particle in the particle of the pa

pulp may also be eaced, avoiding every particit of skin, to the posterior and the preparation are, the direct thing he does to the preparations are, perhaps, but on this posterior and the preparations are, perhaps, but of the preparations are, perhaps, and the set fine the father of the preparations are, perhaps, and commonly the preparations are, perhaps, and commonly of water the condition there is no approximately provided by decided of a physiolan. To reduce the condition there is no approximately of the preparations are as a summer tregituit in abundance, milk, and offer the preparations are as any or offer decided of the preparations are any or offer decided of the preparations are any or offer decided of the preparations and the preparations are any or offer decided of the preparations and the preparations are any or offer decided of the preparations. The prepara

per bluestren Foors, Forest and Stream leed apply,"—Cor, Forest and Stream prepared tooles is fast wearing away. The prepared tooles is fast wearing away. The medical profession already regards them as used in the same as used in the same in case of weakness and recommends their use. The adoption of a safeticial digestive agents in cases of weakness and failure of the digestive powers is also respected to. This incapacity is more common than one would think, coming from mental healt, disease, accident, negligence, etc., and north, disease, accident, negligence, etc., and nearly introus to good digestion. The body demands, food; for the brain and neares, phosphates, foor the brain and neares, phosphates, foor the brain and in millaging up of stessus. But when the liver is defanged, the performed, hence only in a pre-digestive form can it be assimilated by the system. Albumen in the massles proportly be offen will a she will be sent the proportion in its in the proportion in the proportion in the part of the proportion in the proportion i DANOER YEAM. EXTRACTED EATTERBUKER (1019wing men that is now EXTRACTED EATTERBUKER TANOS.—During the winter of 1884-85, I was following my califies as a staidenmist in a South Following my califies as a staident brought me a large male rattler, the skin of which he winted to ratters and extracted the rate of my my large wire catters and extracted the stable. Within a hour of than a month, but it seems to more than a month, but it seems with them, I slightly everatored one of we have a seem of the first joint, hardly breaking the sein. The next more than a mouth, but it seems on the first joint, hardly breaking the sein on the first joint, hardly breaking the sein on the first joint, hardly breaking the sein on the first joint, hardly breaking the send causing moup pair. The next morning my and a line the services of a physician. In a mal I congratulated myself thes ame experience, and I seems and I congratulated myself thes ame experience, and I congratulated myself thes an end a stain was cured, but two days later it again more through the same experience. After this I received no more trouble from it it laid in the services of a physician. In a cora dout six months, when, for the third time, the services of a physician in the correction were fitted in the foreived no more trouble from it it laid me up for a week. Since then I have forget it, for I am left with a fine thinger sightly defect the seed that the seed in the practical uses. The preserved of the selection uses a doppted for a motto: "No rattlers formed, apply."—Cov. Forest and Streams.

GOOD MEALTH,

CLEAMSING BEASS,—Salt and vinegar applied hot is said to be one of the best things for polaning afterward be polished with fine sahes.

CLEAN and oil leather belts without taking them off their pulleys. It taken off their pulleys, and taken off they will and removed again after the belt has run a tew days.

To BLACKEN the graduating lines on boxwood rules, asphaltum varnish is rubbed into the lines, and when perfectly dry, is sendpapered off from the surface of the wood, leaving the black in the lines. This is not affected by the shollso varnish which is applied subsequently.

LACGING OAST-IRON PULLEYS.—It is found that east-iron pulleys may be lagged with teat cast-iron pulleys may be lagged with leasther without the use of rivets by first bring over the surface with accept a rough surface; then strach the leather to the face of the pulley with cement made of one pound of fish glue and one-half pound of common glue.

To Remove Moss From Marrers.—To remove mose and weather discolorations from marble mose and weather discolorations and collesson of caustic potsath, quicklime and off-cosp, and apply with a brush; leave for about a week, and apply with a brush; leave for about a week, and apply exent and again until the stains bave discapply again and again until the stains bave discappeared. A week solution of agus fortis or nitrit and again and be used if preferred.

OILING BEARINGS.—Many a bearing in scourate brown to heat take by aligned shatting has been known to heat take by aligned shatting has been known to follower even when supplied with abundance of oil. The trouble often arises from the bail oil now up so that the outside of the bearing. It added runs off the outside of the bearing. It would amount be fed, say one drop in three minutes, the oil-hole will never be filled, and the air can escape as the oil enters the bearings.

Wrinkles,

Wrinkles are due to the gradual wearing away of flesh underteasth the outicle. Why does it was a way? Because the lacial muscles have debut underteasth the outicle. Why does it it will be observed that wrinkles that of exercise? Why, the wrong washing and will place to be served that wrinkles to be enter. Meat exercise? Why, the wrong washing and will have the effect of counter years the effect of counter and withing a day was a consider the face, to be enter the effect of counter acceptance of the face the face to context and will be observed the face to context and will be caticle, and will keep the face the acticle and will was a confirm the states and will keep the face the acticle and will especially the face the context of the face the effect of counter active and the result is worth make it to acquire at first, but percevene will make it to acquire at first, but perceve will make it for the beach of the eye and the upper portion of the face, where hollowness rather than wrinkles is often noted, another plan must be taken. The scale is designed particularly for the most portion of the face, where hollowness rather than wrinkles is often noted, another plan must be taken. The face where hollowness rather than wrinkles is often noted, another plan must be taken. The face where hollowness the train of the face, where hollowness and put the eace and to develop the muscles are subjected to the corrects for this purpose is the deck form to muscles are subjected to the face for this purpose is the deck will bring into play only the ordinary muscles of mastices. An excellance are not be the face for the proper plan in the case of the face face. An excellance and put the each of the face face is desired. The face were the face in the face face face in the face in the face face in the fac

in the control of part of the state of control of the control of control of the control of control o

USEFUL INFORMATION,

laformation for Swimmers.

ence of Mind the Only Safeguard in Case of Danger.

The bashing season being fully upon as, and the obligation of the ord base of Dargos.

The bashing season being fully upon as, and table stores of drowning have a lead to the control of drowning have a lead to the bash several cases of drowning have the bash several cases of drowning have the bash several cases of drowning have the being the bash would seem to make the both of the usual professor the other day, "we'll be and and among them as a usual, a fair share of examiners. The obligation of drowning cases, a wimmers are so often drowning have they see to and and another the seems of the store of the short of the seems of the seem

To Prepare Rose-Scent Jars.

tively, know the never-ending satisfaction to be derived from the possession of a rose-scent jar, derived from the possession of a rose-scent jar, other jar has been to be derived from the possession of a rose-scent jar, within the reach of the majority, furnes to an apartment than one of these jare, furnes to an apartment than one of these jare, necessary cleaning and dusting is finished, for an bour, and then carefully closed.

All your friends will sak: "What gives your tooms so delightful a fragrance?" It is such a pure yet delicious odor that it is barch a pure yet delicious odor that it charms every one.

one detailed to the case-stock should be detailed to the case-sking member of the should be detailed to the case-sking member of the family who never forgets anything.

Gathor the rose petals in the morning, let them stand in a cool place, tossed up lightly for any them stand in a cool place, tossed up lightly for any notice of the case of the purithment of the case of the ca

ENGINEERING NOTES.

Yacht-Building.

The form and speed of yachts has become of late a very interesting stady in marine on-gineering, and a largely increased interest backering, and a largely interessed interest but the general public during the last few years. We give the following the last few years. We give the following the last few years.

been taken in the matter by the general politication. Inserts the property to the past of the past of

asme type.

The Byreer Cars of Mew York nearly 250 miles of the other are after a control of the city of I dow York nearly 250 miles of street reliway, divided among the 16 comparates the iten religious of the creeks of the creeks of which, if stretched out in a continuous line, would extend from New York to Jacksonville, which a report has been made, notwitheranding which a report has been made, notwitheranding the 500,000 daily passengers on the elevated number of I/1,499,927 spassengers. To transport this immense has been seen to make the elevated number of I/1,499,927 spassengers. To transport the comparison of the collection of the control of the control of the collection of the year of the colling and live-stock amount for ears, to \$1,862,865, and for care, to \$1,862,865, and for care, the colling and live-stock amount for over \$7 per cent was declared and \$2,206,98,58,500 over \$7 per cent was declared and \$2,206,98,500 over \$7 per \$7 per cent was declared and \$2,206,98,500 over \$7 per \$7 per cent was declared and \$2,206,98,500 over \$7 per \$7 per

A STEAM WAGON.—In a machine shop at Audurn, Me., can be seen a novelty in the shape of a steam wagon, now in process of consequence of a common Concord wagon, with the speciars of a common Concord wagon, with the sovering will show above the body of the wagon. All the motive power will be concessed ander the flooring. The power will be in right of wagon. The hootier is made from iron pipe in spiral form. The wagon body contains two seats, form. The wagon body contains two seats, seally holding three each.

Undergonous Telegraphy Wires.—Chiesgo

copper is precipitated, which can be thickeneed by repeating the process several times. It is breas color is desired, a saturated solution of one part of vitriol of copper is used on the previously coppered solder, and the soldered rubbed with a rine varied with the proper in the same with gram or net indicated above, and then with gram or is included, and powdered with bronze powder, is ingless, and powdered with bronze powder, in a series of the proper in the series of the process of the series of t

week with a view of the property, went to San Francisco James and milke a score in San Francisco James and milke a property, went to San Francisco James and milke a property of the season is controlled by the parties and creation on the killey milke a property of the season is over Milk. Abridous will perform the state of the season is over Milk. Abridous will perform the state of the season is over Milk. Abridous will perform the state of the season is over Milk. Abridous will perform the state of the season is over Milk. Abridous will perform the state of the season is over Milk. Abridous will perform the state of the season is over Milk. Abridous will be the state of the season is over Milk. Abridous will be the state of the season is over Milk. Abridous will be season will be se

property. We are assured the thew complany wing at once erect the machinery necessary for deep working.

HILDRETH.—Fine Gold Mines, July 8: The search was a mill is now turn night only, while to the did not be searched to the did not be search of water. The mine is looking well and search of water. The mine is looking well and search of the Wilson mine progresses rapidly, and some very tich quarts found in fact search on the extension of the Wilson mine progresses rapidly, and some very tich quarts found in fast did not be surface recently from this famous mine—before a search of the was a search of the surface of the search of the surface to the present state of the surface recently from this famous mine—before a search of the search state of the search of the

body of water in them.

B. I Doredo.

B. I Doredo.

TUNVEL.—Placerville Observar, July 9: The Ralph brothers, Thomas and William, are opening out the old tunnel in their gravel mine at Reservoir Hill. The main tunnel has been run about 800 uut the old tunnel in their gravel mine at Reservoir Some took gravel. The old Barnes mine, on the Some good gravel. The old Barnes mine, on the past them to be taking out free took gravel. The old Barnes mine, on the past the may soon the past the may be past in the machinest of Sam bonded to a company of Sam as in was needed, never venturing to erect the necessary machinery for the thorough development of the property. We are assured the new company will strong once erect the machinery needed and property. We are assured the new company will strong once erect the machinery needed and the machinery needed and once erect the machinery needed working.

Coppersoolis.—Calaveras Prospect, July III; Coppersoolis is having a boom at present. On the first of July the pumps were started to work to pump out the water in the copper mines, and it will likely take several months to drain the mines of the large body of water in them.

CHLORINATION.—Angels Echo, Jaly 6: Mr. P. S. Buckminster has commenced building chlorination works a short distance east of this town. Teams have already been sent out to get the necessary machine and the control of the processary machine and the processary machine and the process of the pr

DRIFTING.—Amador Sentinel, July 6: Drifting is in progress at the Mew London mine. The last cushing of rock from the Live Oak mine paid \$5.0 pet fon. Frank Walker has purchased the interest pet fron. Frank Walker has purchased the interest of Mr. Harris in the mine. At the Kennedy mine a new office is being erected, also a new changing ported, also a new changing a new office is being erected, also a rower changing. In of the old stall, for purposes of the depth of the old monthly dividend of the Plymouth Conformation of the old shall, for purposes of the Plymouth Conformation of the old shall, for purposes of the stall shall in the same of the depth and the stall in the stall shall be such decisted, which makes the solidated mine has been decisted, which makes the subdated of dividends paid reach the large amount of \$20.000. The stock is selling for \$20.85.

### CALIFORNIA.

The following is mostly condensed from Journals published in the interior, in proximity to the mines mentioned.

MINING SUMMARY.

are good.

SAN JACINTO.—New mining operations are now being opened up in the San Jacinto range of mountbeing opened up in the San Jacinto range of mountbeing opened up in the San Jacinto has been shown a first looks fine.

Barate.

Danoeral, July 9: The Hyde Mine.—Sonora Danoeral land of this mine, consisting of a Blanding cunsher and a Hunnington roller-mill, base been ordered by the parties who have lately bonded the mine, and a Hunnington roller-mill, bonded the mine, and a Hunnington roller-mill, is a Slanding cunsher and a Hunnington roller-mill, bonded the mine, and work will at once commence on millisite and erection of mill-building and millisite and erection of mill-building and millisite and erection of millishal conjection, and it is calculated that the mill shall start into operation in two weeks or less time after arrival of machinery on ground.

Slanding and machinery and Eurona.

ROARING CARIN—Cor. Julian Sentinel, July 9: The Roaring Camp is a mining district inteate near which is foolking very tevorable to its owners, as they have plenty of free gold in sight, and their prospects are good.

### San Diego.

that indications for so coing size propintous.

Pigcor.

Pigcor.

FOREST HILL DIVIDE.—Cor. Placer Herald, July are per principle of the forest Hill divide is the best I ever saw. This divide is between the Middle and Month Forks of the American river. Middle and Month Forks of the American river. Damascous. A French company is running a tunnel there, and the Baker Divide Co., Hidden Trescure, & Moreiler, at Lows Hill, as well as Breece & Moreile Star, at Lows Hill, as well as Breece & Moreing Star, at Bath, are all showing up well.

ingerge motion unite; and the company of the compan

feet of solid quarts of good quality. At the same time the north drift is being there abeae, and the ledge and ledge matter brow an average width be-ween walls of eight feet. The quartz keeps up to its average yield.

Washoe District.

CON, CALIFORNIA AND VIRGINIA.—Enterthyrise, in the case that colored the bulkeded to the tage of ever and the contract the case that followed, the shaft in the shaft of the mining disaster, less that course of the mining disaster, less that course to the total state of the mining disaster, less that the shaft and it will be necessary to wait for it to a course of the mining disaster, less that course and it will be necessary to wait for it to a course of the mining disaster, less that course and the mining disaster, less that course and the mining disaster, less that course and the mining disaster, less that the shaft and sinting the case that followed, the shaft is the same and the fire at the case that followed, the shaft is the shaft and sinting the case that followed, the shaft is the shaft and sinting the case that followed, the shaft is the shaft and sinting disaster, less that of the mining disaster, less that the shaft and sinting the case that followed, the shaft is the shaft and sinting disaster, less that the shaft and sinting disaster, less that the shaft and sinting to be done on the west state of the case that followed, the shaft is the shaft and sinting disaster, less that the shaft and shaft and sinting to be done on the west state of the shaft and shaft and

### Washoe District.

oid settlets here that there will be a lively camp here in a short time.

Yuba.

FROM HYDRAULIC TO DRIET.—Marysville Demovari, luly 9: Yesterday Charley Compton and W. Owarf, luly 9: Yesterday Charley Compton and W. Chamberlain of Smartsville came before the Board of Juppervisors of this county with a petition of the county with a petition as the county with a petition of the county of the rayine adjoining the they petition of the past of the material now in them they petitione and the past of the material own. Supervisors of they petitioned the board to give the material of the mine, they petitioned the board to give the constitution of the board to give its consent to silow they petitioned the board to give its consent to silow wages to about so men. This will revive to supervisors went home lest ingit rejoining the chitomer went home in sing the complex will revive the single at the same to the signed a permit, and the failure of the signed a permit, and the same to silow and oreste a large trade for Marysville, and will not in any sense damage the Yuba river more than any other quarts or drift mine.

known as the Missouri and Mew York bars.

Yonture—
Yonture.

Yonture.

Yonture.

SANTA MARIA.—Cot. Santa Maria Times, July santa Maria Times, July santa Maria Times, July santa Maria Times, July santa maria for the source one some so come in. One gentleman from the southern part of the State, who has plenty of morely was in here a few days ago, the location joining the Esperanca milliple way, the location joining the Esperanca milliple way, the location joining the Esperanca milliple was, the location joining the Esperanca milliple was, the joining struwed a lew days ago doubt but there is ground here that will pay sufficiently will be would put up a milliple way, the joining strumed a succession to be a success. I have under the under the world make a good doubt but there is ground here that will pay sufficiently well to work a good amont with the side of Frasier mone and fix foreast the marines, and he quartaled or the Esperanca mines. Mr. Mines has a sood locking gold to repair their machinery and fix glower to the Esperanca mines. Mr. Mines has a word-looking role. Mr. Haylock is driving a turnith stance of the Marper mines and sections of the Location of the Marper mines and is a should make a load of or one of the Marper mines and sections of the Location of the locat

RIVER MINING.—Independent, July 9: Quite an extensive operation in river-mining has been started on the Indiame, about two miles above Jackson-ville. Mr. Griggay, from Colorado, who, in early ville. Mr. Griggay, from Colorado, who, in early ville. Mr. Griggay, from Colorado, who, in early care, became acquainted with the Jacksonville secony employed in cutting a canal to turn the river, now engaged in their development. About so men and we are informed first the desires so or 30 more to complete his crew, He will work under the old system of river-mining—dams and pumps. The locations—some 1% miles in extent—are on what is calciung—some 1% miles in extent—are on what is known as the Missouri and New York bars.

### .eamniouT

Octobry, Good Mine: —We hear good reports from the Buck mine, on Spring guloh in the Indian Creek Buck mine, on Spring guloh in the Indian Creek Gang, have been working steadily on the ledge for the past few months, and the mine is now pretty well opened. The ledge is about a foot in width and the rock goos from \$40 to \$60 to the ton. A good deal of ore has been taken from the ledge and means will soon be procured to crush the rock.

the partners have been running a tunnel which they completed last week. The tunnel is 90 feet long and gives them 75 feet of new stopling ground. The said gives them 75 feet of new stopling ground. The sides containing into a billing is ton a day is a steadily running sides containing a ton a day is a steadily running on the rock. This is one of the most promising on the rock. This is one of the most promising on the rock. This is one of the most promising on the rock. This is one of the most promising capseity of crushing a large and large a bright future and that there will eventuately be a great deal of tavel to those places, prohibing inches to a profile of this county abould go to work at once and profile and the proper of this county abould go to work at once and that is road through to the bead of Morth Fork and county.

### Garffeld District.

BENTON,—A drift has been run through the mine on the 785 level, and orders from below for cross-cutting are awaited.

Porost.—Are still drifting south on the 450 level. fuch ore is stowed away in the lower levels to await icilities for milling.

WRICKERBOCKER.—Good progress is being made in the inning up of the engine and machinery, which had become somewhat displaced by settling.

IOWA.—The mill is testedily ununing, and there is a good showing of smalgam on the outside plates. All parts of the mine are looking well.

All parts of the mine are large quantities of ore in sight and ready to be extracted as soon as additional mills tean be obtained.

The usual exploring and prospecting drifts and the same are also prospecting drifts and crosscuts are being run.

The usual exploring and prospecting drifts and crosscuts are being run.

Porosi.—Are still drifting south on the 450 level.

county.

ANDES,—Some good ore continues to be extracted
at the usual points. Are now running an exploring
drift to the northward on the z4o level and drifting
west.

WORK IS Deing done,

LADY WASHINGTON,—Are tunning north on the
Jevel. The full size of the drift is in quarts of a
low grade, with some streaks of rich ore. The drift
low grade, with some streaks of rich ore.
Justice.—The usual prospecting work is in progress. Some good deposite of paying ore have been
dump.
AUDES,—Some good deposite of paying ore have
dump.

DEST AND BELCHER.—Owing to the disaster in noting valuable deposits of ore, the Gould and Chirty and the losing of six men in the Could and Chirty and the losing of six men in pecting work has been done.

SCORFIOM,—The east drift from the 300 level Score or the state of the sta

LG ICEG.

OCCIDENTAL.—The usual work is being done on the 48, too and soo levels. In the lower tunnel, uplace 48, too and soo levels. In the lower tunnel, uplace 40, so and soo levels. It is sassays.

OPHIR.—The west drift from the bottom of No. 1 winse on the 1300 level is out 85 feet. The works of repairing the Joint Ophir and Mexican east crosscut repairing the Joint Ophir and Mexican east crosscut on this level is making good progress.

YELLOW JACKET.—Continue to extract and send for the miles and in silp parts of othe daily. Are prospecting to the milit soo tons of ore daily. Are prospecting to all parts of the miles and in several places are funding valuable deposits of ore, eaveral places are BEST AND BELCHER.—Owing to the disaster in

good ore is being extracted for milling,

SERRA NavANA.—On the 5x0 level east crosscont

Ao, s, efacted from the main north lateral drift opposite west crosscott No. 9, was advanced 50 feet;

posite west crosscott No. 9, was advanced 50 feet;

promising character.

HALE AND MORCROSS.—On the 1050 level No. r

HALE AND MORCROSS.—On the 1050 level No. r

east crosscott has been advanced as test and No. r

east crosscott as been advanced as test and No. r

east crosscott as feet. Have resumed work in the

rest crosscott of the control of the crosscott of the control of the crosscott of the crosscot

hine.

On the 785 level are still drifting north on the 800 level.

On the 785 level are still drifting a wince at the coultr.

The grading for the new mill will be completed by Mondey perserved and the frame and mill timbers last Thursday morning. The first the frame and Mexican arthrupology ago level assistly, was extended so feet. This drift is now 783 feet in Mexican ground. The joint Mexican ground. The joint Mexican ground. The joint Mexican and Chile the first to the seet are crosscoutting in a formation while populates well will. The crosscutting will be pushed through to the west wall, The crosscutting meyer yet been resched. On the sol milling has good one is being extracted for milling.

Boad one is being extracted for milling.

CHOLLAR,—Connection was made yesterday morning between the old Chollar shaft and the morning between the old Chollar shaft and the between the two shafts is too feet. The connecting drift surikes the Sharon shaft 450 feet below its top drift surikes the Sharon shaft 450 feet below its top and the old Chollar shaft ass letel below its top nection was made, the drifts from the two shafts nection was made, the drifts from the two shafts nection was made, the drifts from the two shafts level incy have started a crosscut—No. 1—east at a point too feet south of the Hale and Norcross south line.

west drift 8 feet. The west drift from the shaft sta-tion on this level was extended so feet, and con-tinues in a strong body of quartz carrying some good ore.

And here the Carly, John Cadman, its lefting tests and Hugh Higden are working the Property of the country of the Carly (194) ones, one to concern the Warra Lakens of the Carly, John Cadman is taking the color and the Carly, John Cadman is taking the color and the Carly, John Cadman is taking the color and the Carly of the Carly, and the property of the Carly (194) one can be cleaning to the control of the company of the Carly (194) one can the Carly (194) of the C

SHAKESPERE.—Cor. Clifton Clavion, July 6: december of the same of

OFEGON.

DAHO.

THE EMERY.—Wood Rivet Times, July 6: The Emery mine, nearly mine, near the bread of Deer creek, is respidly developing into a bonanca. The ore shows a width developing into a bonanca. The ore shows a width itnue, are the feet of solid galean, and continue to of six inches to threese is question and quality. There is a carload of shipping ore on the dump, and five in a few admensariate to increase in questing the trial. After a few admensariate or she have continued and the real, white the mere and to make it down the trial. After a few and horese, and increase the force of miners. The owners and direct and downers of the Emery are J. W. Burns of this city horse of the Emery are J. W. Burns of this city and Mr. Flannery of Deer creek.

STRIKE IN THE WAR DANCE.—About a week as white Rapid and the War Dance mine, cut the vein, and work on the War Dance mine, cut the vein, and work on the War Dance mine, ment of high carry at loose, and about five ton the vein was somewhat loose, and about five ton the cort with the standard of the chule, the force at work immediately, and inske a few shiptore of the control of

gramic, here and there porphyty gramic conteact. The district lies between Freeland and Georgetown, it is easy of steeses by Chitego creek or through Freeland. The producing mines are the Charter Freeland. The producing mines are the Charter View, Oak, Ouida, Argo, Moillie Bawn, and Dentver View, There are automotous prospects having some ore in sight. The one is silicous gangue with about a sperial scanned as day, Some will mill some lead, silver and some good. There are simplest about a some on the camp in mines and prospecting. The camp is relatively new yet; ago feet on the Argo is the deepest working.

### VEIZONE.

PARADISE VALLEY M. Co.—Sirier State, July Paradise miss. Solve State, July Paradise miss. Solve States to the mill man to be produced and delivered to the mill me solve be solved to the mill see produced and delivered to the mill me solved to the solved see says one solved s

Wild Rose District,

BELLE ISLE.—Have had to surpend work, while the retimbering of 70 feet of the Navajo shaft is in propress.

cut east from 150-100t level of North Belbe isle base cut east from 150-100t level of North Belbe isle been catended is feet. In this distance we have cut from a fait is the 100-00t station. Several seams of high-grade over his passes a station as a fact of the 100-100 level, which is being worked incust of sect of seat of s

when it should the Education of their construction of the company of the construction of the construction

Emery mine. The owners intend to increase the ments of no 19eet Creek, and is an extension of the ments before at work immediately, and make a few slipping before at work immediately, and make a few slipping before at work immediately, and make a few slipping before fall.

BULLION INCREASE.—Boise Statesman, July 9: received for sessay and burchase during the certification increase the sessay office as a seasy office the same period of 1886, inc receipts were received for shellon, walued a stage, 385, 500. But the business of the office this year over the business of the current facesty bear well exceeding the business of the current facesty bear well exceeding the business of the current facesty bear well and the follon, while an intended by all creepted that the business of the current facesty was exceeding the business of the current facesty was exponent to be afforded by direct to be far creepted that the business of the current facesty was well and the total facesty of the facesty over the decedy of the total facesty of the decedy of the face that the form the various and the total facesty of the year wall and the fourth of the same business of the contracts to be afforded by direct of a million in gold, and we may the facest facesty was said to be contracted by the contract of the the various out a quantity of rock, the peculiar appearance of the facest face facesty of the ways over the decever made of a solution out a quantity of rock, the peculiar appearance of the face of the fac FROM COOKE CITY.—Inter-Mountain, July 7:
Hairy Gasself, now in Buite feet din the mines about
Cooke City, is now in Buite for the purpose of intercooke City, is now in Buite for the purpose of intercooke City, is now in Buite for the purpose of intercitic track. There are at present between soo and
impeded on account of the necessity of freghing
impeded on account of the necessity of freghing
office track. There are at present between soo and
the district is the Republic company, owned chiefly
by Philadelphis parites. This company has put up
affairtic, carry lesd, silver and copper, and tend
foo and too feet, The ore body is so feet in width,
too need, the lead, where it was prinched on tar
too sand 300 feet in depth. The lower tunnel is in
the Mannel are an a

## .ANATHOM

duction Works is starting on about ten tons of Southetta Oregon ore, This fact, as the beginning of
the direction works is starting on about ten tons of Southin reducing ores, is especiably inferesting. It is conment exists in the Deer Creek district, beginning of
and increase the capacity of the works, as projected,
and increase the capacity of the works, as projected,
and increase the capacity of the works, as projected,
and increase the capacity of the works, as projected,
and increase the capacity of the works, as projected,
and increase the capacity of the works, as projected,
and increase the capacity of the works, as projected,
and increase the capacity of the works, as projected,
while be about an analysis of the start of the capacity of
the continue, on, a great fortune is in store for the locations,
and well of the Cove is completed. Messrs, Plokett
be continue to the Mannoth mine capacity of the work in an appearance from every directions,
and well of the Cove is completed. Messrs, Plokett
the total to the Cove is completed. Messrs, Plokett
the ore into bullion. The Cabell Bros, are now exing the working the completed and the presentations on the Mannoth and the completed and the presentations of the Mannoth during the completed. Breather of the Cove is completed. They intend etecting a season's campaign
and well edisppeared, large unmers of or the capacity of the capacity of the season's campaign
ment. They intend singleted have such direction,
and the month during the coming esseon. Now as the snow
well and the prospects yet worked in the Silvert
work in an appearance from every direction,
and the month during the coming esseon. Now as the snow
and adversar their Hurricane or edunipment of the capacity, and an intended to in they work with development, as the ease
sour as a short of the season's campaign, the capacity of the such and the such as a such as

other expensive lestures usual to coal mining, Berlected.

PARK MOTES.—Recoval, July 9; Frank Melbar and other second of the work of the second of the second of secon

GCOFIELD.—Sait Lake Tribune, July 9: The property is in nice shape. The Pleasant Valley of property is in nice shape. The Pleasant Valley of mine employs 53 men and the innice on the tribunes of the two companies is about too lone per admines of the two companies is about too lone per admines of the two companies is about too lone per summer, and the demand is all the time increasing. The two properties are well managed under the superintendence of Will G. Sharp. The Pleasant appearance of Will G. Sharp. The Pleasant appearance of Will G. Sharp. The Pleasant are two properties are well managed under the an increasing the two properties are well managed under the nature, and has been very much cramped for room for the railway tracks. By widening the gulch more cavations are being made for new and larget ore fourtes and other conveniences, which will more than on the railway tracks. By widening the gulch more cavations are being made for new and larget ore thuse and other convenients of the country, and are of the capacity for handling coal. The mines are suportied as to require no machinery or other expensive features are using to require no machinery or other expensive features usual to coal mining, Become of the coa

the Sunnyside ground.

BI-METALLIC.—The new shalf is down a distance of 10 feet, and the ground already getting hard.

Work on the upraise in the old shalf progresses, and the mill is running steadily on the unusual quality of rock, and the mine is keeping the ore-bing the mill is running steadily on the ore-bing the contemplation was begun yesteriated quality of rock, and the mine is keeping the ore-bing the contemplation was begun yesteriated to the state of the very many of the sunder the property. The vein on the earliern end of the property. The vein on the earlier is a possible of the contemplation was begun yesteriated with the property. The vein on the surface is about four property. The vein on the surface is about four property. The vein on the surface is about four which has just expired, however, will become base, and of a character necessitating shipment as well, being about eight teet in renewed for nine tongwall ten inches of ruby silver. The stead decongraph of the property of the property of the stead of the property of the stead of the property of the stead of the stead of the property of the stead of

we shalfs, 35 and 15 feet deep, The gentlemen will begin at once to sink a third shalf shalf shalf at once to sink a third shalf sha

miles east of Feeley's station. The property was located six months ago by Mr. Miller, and is owned by linnsell and Albert Mickel. It is developed by linnsell and Albert Mickel. It is developed by leve shafts, as and a state and put up a begin at once to sink a third shaft and put up a ten-stamp mill.

# HAZELTON BOILER.

A NEW AND RADICAL DEPARTURE IN

## GENERATOR. **STEAM**

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

FOR CIRCULARS.

MOTIOE.—All our plates are guaranteed to have the feated bethe full weight of silver agreed upon, and are feated betore leaving our works, thereby avoiding the compliants about light weight, made so often before we started in this branch of industry. San Francisco, Cal. PACIFIC IRON WORKS

BRAYTON & CO.,

MINING WACHINERY,

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. IN QUARTZ, GRAVEL, OR PLACER MINES. MADE OF BEST SOUT LAKE SUPERIOR COPPER FOR SAVING GOLD!

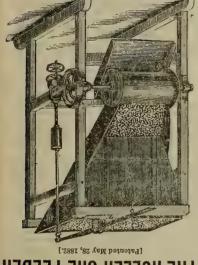
HYDRO-CARBON ASSAY FURNACES Agent for HOSKINS'

BATTERY SCREEUS AND WIRE CLOTH

Assayers' and Mining Material.

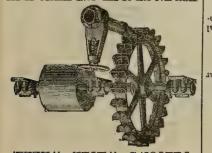
521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

# THE ROLLER ORE FEEDER



Sole Manufacturers, Street, . . San Francisco, Cal Golden State and Miners' Iron Works.

PELTON'S WATER WHEEL,



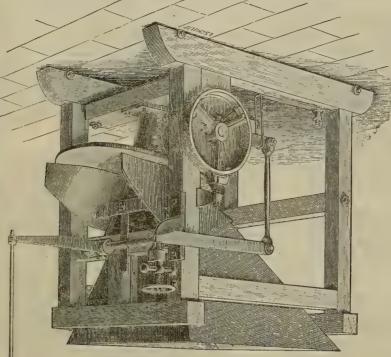
THIS WAS ONE OF THE FOUR WHEELS TESTED A to be cont, distancing all competitors. Bend for weye 90 2 per cent, distancing all competitors. Bend for the cent, distancing all competitors. Bend for the cent, distancing all competitors and guaranteed estimates.

A per property of the control of the central control of the central central

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL. 10SHOA HENDY MACHINE WORKS,

No. 108 FIRST STREET.

SAN FRANCISCO NOVELTY AND PLATING WORKS



"OHALLENGE" IMPROVED ORE FEEDER.

The est form of reeder ever devised, and prononneed by reputable mining men to be far appearior to any form of 'Roller' Feeder manufactured. We refer to the follow-

ing gentlemen who have furnished as with testimonial letters to the above effect, which can be seen at our office, viz.:

N. W. Chooker, Supt. Bunker Hill Gold MinIng Co., Amador City, Cal.

J. R. Trechon, Supt. South Spring Gold Mining Co., Amador City, Cal.

J. R. Trechon, Supt. South Spring Gold Mining Co., Amador City, Cal.

And many of there and we are are prepared to furnish either the

And many others, and we are prepared to furnish either the

And will furnish descriptive Oatslogues and copies of Testimonial Letters, and will quote prices upon application. "CHALLENGE," "STANFORD," "TULLOCK," or "ROLLER" FEEDERS,

36HOH &

For Sale by all druggists

ELECTRIC SYSTEM THE RAE

FOR PACIFIC COAST,

CAPITAL, - - \$1,000,000.

Incorporated under the Laws of the State



INVENTORS, TAKE

Experimental machinery and all kinds of metal, tin. L. PETERSON, MODEL MAKER,

# Metallurgy and Ores.

## SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office. **COLD AND SILVER REFINERY** 

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE,
LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

## JOHN TAYLOR & CO.

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GIZLE, GEVERNEE END SAMDELES' KLC' CHEMICEF VALEENICE VAD CHEMICETE' DEAG

II4-II8 Pine Street, - Sen F We would call the attention of Assayers Multy Companies, Milling Companies, Froga-to our full stock of Ediances, Furnaces, Mul-acid, Storifiers, etc., including, also, a tu incultodia.

### NO. 28 STEVENSON STREET, Nevada Metallurgical Works.

Mear First and Market Streets, S. F.

Ores worked by any Process,

Ores Sampled. Assaying in all its Branches. Analyses of Ores, Minerals, Waters, sto.

Working Tests (practical) Made. Tang Specifications furnished for

Mines; Plans and Reports furnished, Special attention paid to Examinations of serO gnizhoW rot seesorT eldzina trom

C. A. LUCKHARDT & CO.,

Mining Engineers and Metallurgists.

METALLURGICAL WORKS.

S18 Fine St. (Basement,, ord Street, . - SAN FRANCISCO

g and Analysis of Ores, Minerals and Waters. xamined and Reported on. I Instruction given Treating Ores by in

G. KUSTEL & CO.,

AND MAILED FREE ON APPLICATION, INZL IZZNEDI

ROCK DRILLS, AIR COMPRESSORS, CLAYTON Catalogue No. 5, Jan I, 1887

Office, 43 DEY ST., NEW YORK Clayten Air Compressor Works, And General Mining Machinery For CATALOGUES, ESTIMATES, Etc., Address

COAST, COAL MINES OF THE WESTERN

Restrice of this work, the only one ever publishes reacting of Pacult Codes (Cod Miller) and are seen to the code of the code

# Mining Turbine Water Wheel, JAMES LEFFEL'S

any other which finale, Hoing placed on horkouts, said, the power is transmitted direct to factor which the power is transmitted direct to factor the property of the property of a property of the property o

JAMES LEFFEL & OO.,

or 110 Liberty St., Mew York.

FRASER & OHALMERS, General Agents, Chicago, Ill., and Denver, Col

# WINERS

Quartz, Gravel and Placer Mines!

Springfield, Ohio,

**AMALGAMATING** Silver-Plated

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

663 and 665 Mission ST., SAN FRANCISCO, CAL.

ESEND FOR CIRCULAR.

QUARTZ MILL, FRASER & CHALMERS Hantington Centrifugal

SEND FOR CATALOGUE TO

HGS and TROMMELS.

CORNISH ROLLS, 1165 and ENCINES AND BOILERS.

ing smelting works -basi ni noitareqo ni al verizer is without rival,

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

PUMPING



ENGINES

HALLIDIE'S

MIKE ROPE

TRAMWAYS,

MEXICO OFFICE: No. 11 Celle de Juerez, Chihushus, Mexico.

GEMERAL OFFICE AND WORKS:

GENERAL OFFICE AND WORKS:

NEW YORK OFFICE:
ROOM 48, No. 2 Wall Street.

'HOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

> ETC., ETC. ASSAYERS, CHEMISTS, MINERALOGISTS, MINERS, IMPORTANT TO METALLURGISTS

> > 'Sawna

MACHINERY,

CORNIZE

**ENCINE2** 

HENEL CAREY BAIRD & CO., We have just compiled a very complete List of Recents and Standard Works on the above subjects, which we had standard Works on the cabove subjects, which we will be gated search these by mail, postage poid, but on who will be supply.

Also a Mowe Labelogue of Bodes on Electro-Metallurgy, Also a Work was entered the working the which will be sent it en upon a policy of the whole will be sent it en upon a policy of the whole will be sent it entered the defendable of Standard St

Industrial Publishers, Booksellers, and Importers,

810 Walnut St., Philadelphia, Pa., U. S. A.

## List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Ploneer Patent Solicitors for Pacific States.

From the official report of U. S. Patents in Duwny & Co.'s Patent Office Library, 250 Market St., S. F.

FOR THE WEEK ENDING JULY 5, 1887.

Leies, Cal.

gós, 908.—Mosaic Work—B. Chaiain, S. F.
366, 103.—EXTRACTING BILVER—O. Holmann,
366, 103.—EXTRACTING BILVER—O. Holmann,
366, 103.—BERR COOLER—Liddicoat & Utsinger,
366, 123.—POOL TABLE ATTACHMENT—X. Mar366, 123.—POOL TABLE ATTACHMENT—X. Met366, 123.—POOL TABLE ATTACHME 965,958.—BRIDLE BIT—H, Baldridge, Los An-

gbieri, S. F. Aermin Eradicatora Meeker, A. J. Albing, Ogn. Abring, Ogn. Abring, Ogn. Abring, Ogn. Abring, Ogn. Abring, Ogn. Tralles—A. G. Mygrad, S. F. 365, 835.—Botton-Holle Gage—Deits Palmer, S. F. 365, 835.—Botton-Holle Gage—Deits Phillips, Los Angeles, Cal. & Flatt, Los Angeles, Cal. & Flatt, Los Angeles, Cal. & Platt, Los Angeles, Cal. Oples of U. S. and Foreign patents through the possible (by mail inventors transacted with partor business for Facilic Coast of the Cal. Angeles and in the abortest business for Facilic Coast of the Cal. Angeles and in the abortest business for Facilic Coast restance, and general patent business for Facilic Coast of the Cal. Angeles and in the abortest business for Facilic Coast restance and in the abortest business for Facilic Coast restance.

### Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Sourntrive Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

365,851. Dated July 5, 1887. This invention relates to a demijohn or bottle-case, and if consists of an outer case with top, bottom and three sides, permanently scurred Logether, and a false bottom and one side suitably braced to gettle a false bottom and one side suitably braced to gettler and hinged within the outer case, when consider a the construction of construction of a combination of plant or colored consists of a combination of plant or colored consists of a combination of plant or colored consists or rock, with a coment or pass within in consists or rock, with a coment or pass within the consists of a combination of plant or colored consists of a combination of plant or colored marble or rock, with a coment or pass within the conservation of the conser

one, you. Dated July 9, 1657, This parent of one deed July 9, 1657, The parent or onoreists of a combination of plain or obeyed marble or rock, with a cement or base within which the whole being shaped and polished to form tiles or mossice.
The irregular pieces of marble, rock, etc., are placed in a suitable mold and cement is poured on to obtain the desired thickness of tile or placed in a suitable mold and cement is poured jecting it to presenre, so the tile or plate may be removed from the mold before drying. The lists an used mently polished.

An EASY BINDER,—A.

T. Dewey's Patent Elastic Binder, for periodicals, and other printed sheets, is the landiest, best and other printed and other printed binders. Mewspapers are quickly placed in it and proteical file and book. It is durable, and book. It is durable, and book. It is durable, for and solentific Press, watchman, formals, Harper's Weekly and Scientific American, 85 cents, formals, Harper's Weekly and Scientific American, 85 cents, formals, harper's Weekly corners, possible and protein for this paper, 50 cents. Send this paper, 50 cents, Send



## Complimentary Samples.

Persons receiving this paper marked are re-quested to examine its contents, terms of sub-soription, and give it their own patronage, and, as far as practicable, aid in circulating the journal, and making its value more widely renown to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. It siready a subscriber, please show the paper to others.

### Don't Fail to Write.

Should this paper he received by any subscriber who does not want that or being the received by any subscriber who for si, let him not lail to write us direct. We will posted sard (costing one cent only) will suffice. We will not knowingly send the paper to any will suffice. We will subscriber to the subscriber to contify us to discontinus it, our it is sometimed, brought it, we shall positively sponsible party requested to stop it, we shall positively domand paymantfor the firm it is sent. Look carefurly demand paymantfor the firm of sign of the shall be substituted.

The subscriber of the subscrib

BACK FIRES Of the Mining and Scientiffer Press (un-bound) and be had to 45 per volume of six months. Per eport (wor volumes) \$6. Inserted in Dewey's patent bind-sr, 50 cents additional per volume.

A FORCE of men has been set to work on the Guerneville chrome mine.

## MINING SHAREHOLDERS' DIRECTORY,

Compiled by her Thuredeav prok advertishents in Mining and Schaffipio Press and other S. F. Journles.

LATEST DIVIDENDS-WITHIN THREE MONTHS. MAME OF COMPANY.

Almont M Co.
Benton Con M Co.
Lady Weshington M Co.
McWillen S M Co.
New York Hill M Co.
Union Con M Co. Dealbong On M Co. Gelifornia 2 20, July 8, Gel. July 8, July 8, Le Elistock M Co. More M DATE PLACE OF BUSINES

## San Francisco Metal Market,

ш	94	9	(0)	98	9	м	•••	**	***	• •	**	м	ч		-	**	•	* *	• •	• •	• •	• • • •		[18	00.	nari	O-
ш	09	9	0	94	g		• • •	**	۹.	٠.	• •	**		• •	* *	• •	• •	• •			es.	10:	1-	H.	LV	Tal	LI
ш	ŧΪ	~	30	O.L	-	٠		4 .	4.1			A I			. 1				100			-0	'n	20	30	TATE	N N
i	0		8	CE.					٠.		٠.					• •							17	rot	YIII	(0.60)	DET.
1	9		6	Ϊ'n		2.0															7		23-			70[ [86]	VŁ.
Į.	9		9	TP				ш																		Jus	d.
1	-		ஓ	8		-		•	-		ш	•••	-8	92	ÎR	ΔJ	<u>ध</u>	91	92(	ο.	þι	10	щ	ΒC	12	así	a.
н	32		@	91		ы		**	• •	• •		•	• •	**	• •	9 + 1	100		• • •	Œ	٠ŧ	[8i	الق	L C		EF	E E
1	_		88	78		100		**	•	• •				* 1	H.D.			13					pi	0	*93	88	Æ
ш	_		0	90	T	100			9.4		2.0	* 1				4.4		2.5	4.8	100	221	ω,				SBI	
ŧ.	1		Ø	00	D.				١.						8.09	d to t	911	0	nra	80	τ.	_^2	100	ATT	TEST	KON	пg
			ð	30	U	١.										40	P		ш				01		no.	ni d	20
Ł	-				6							٠.		٠.								5	in		pol	11114	ŭ
ŧ	-		9	00	3			п	и		- 11			н					, ,		**	Ti.	386	Lö	E :	(on	я <b>.</b>
1			<sub>Q</sub>	08	Ŧ	.79	req	18	×	10	иC	ī		25	Вď	- 01	90	D.	97	0	[4	पा	10	ısi	ь.	३०प	В
{	_		1	8		100	0 0 0	**	• •	**	**						•	• •			ж		•••	•••	t	9 <b>9</b> 4	8
1	-		0	9g 00	g	• 1	***	**		40		* *								2.21			4 6	• •	***	8.00 100 100	я
Ш	15	Q	ð	00	ĕ	*1		* *	4 5	• •	4 2		**		2.0		0.0		0 = 4		- 4		6.9	BL	τ-	-m	ΓÊ
١.	21	н	8	61	~					٠			2.3	4.0		4.44				100	140	аг	TCS	¥4	ier	HAT	<i>a</i> -
П	13			ęzį̇̃																		4	D		B	ogr	T.
Ш	101					м										:										iko per	
Į	=		2	6L		н		н					ш				ш					Ħ	16	щ	44	Beu	a
L	Ig		(0)	6I		М	*	•	•	•	•••	•	•		•••	•••	•••	•••	•	•	*		•			οję	
			_																					-	-H:	E L	CO
ш	_		<b>2</b>	00 20	05	1	•	• •	• •	•	• •	• •	•				• •	* *		***	•	T	0	₹	es1	200	8
ш	_		0	09	7.5	٠.	• • •	• •	• •	٠.	* *		• •			• •	• •	• •	• • •	9	m	LA	N G	Ū\$	3/1	ATT	O
ш	00	22		00	72	٠,		10	**	1.4	4.9	20		Ce II	0.0	0.0		8.00			nc	2	Яt.	т	πô	reg	õ
ш	0ñ		Ď			٠.										TO		<b>P</b> 1	in!	Ţ.	101	ros	1	1 92:	TIC	OTT	$\stackrel{\smile}{\sim}$
1	90		á													0.0	٠.	h.		N	ķ.	3	3	77	SAT	Pres	v
ı																					-	216	4	-41	240	eni Son Reg	M
1	06		(D			ú												40	3 7	101	) C	16	DU	A	1)-	-14	)AI
н	***	- 6	(D)	16		М	•			۳	H	ч	•••	٠.,	•	ů.	(0)	18	ų	ou	91	Н-	=≥	N	ON	1111	NA
н	.,	SS	T '	ŧΙ.	ćπ																						
ı	-	00				-1				-			_														
ı											.3	1	Y	E	TC	я	M										

mrwollot 1	give the	,, Ամֆէ Վլագ	s dated	2¥c	Baorad :	w York 3ar Sil	ev.
		M [1830]					
(a) 8 (b) 8		ру свек			usm.	19:N-0N	117

Copers. Licknes—Slow.

Jean-John R. Strong.

Jean-John R. 

## Bullion Shipments.

We quote shipments since our last, and shall be pleased-to receive further reports:

Pleased-to receive further reports:

Ly space, July 9, 18-200; Meabington, 9, 48-954; Hanuser, 8, 48-954; Hanuser, 9, 48-950; Buebird, 6, 48-360; Alloc, 6, 58-360; Con. 250-360; Bluebird, 6, 48-360; Alloc, 6, 58-360; Gondon, 7, 411,936; Gold Germania, 9, 49-90; Moulton, 7, 411,936; Gold Film, 7, 48-48; Lexington, 9, 48-360; Gold Germania, 9, 48-90; Moulton, 7, 411,936; Gold Film, 7, 48-48; Lexington, 9, 48-90; Moulton, 7, 411,936; Gold Film, 7, 48-48; Lexington, 9, 48-90; Moulton, 7, 48-90; Moulton, 7, 411,936; Gold Film, 7, 48-48; Lexington, 9, 48-90; Moulton, 7, 48-90; Moulton, 7, 48-90; Moulton, 7, 48-90; Moulton, 9, 48-90; Moulton, 9,

Nor Attached the No. Tarkothed that the assemble the set among the set as an expension of the set among the set am

# Table of Lowest and Highest Sales in

	•	oSu'	ецо	EX	<b>Y</b> 90	35	A.R.					
MAME OF WEEK WEEK WEEK ENDING ENDING ENDING ENDING ENDING ENDING ENDING ENDING HAVE THE ENDING ENDING TO THE ENDING ENDIN												
3.00 3.00 A.00	4.00.4	3,90 1,35	2.20	68.1	3.25 00.1 38.1	3.00 3.10 3.15	AttasəbuA					
491 GT.	7 00.6	94.9	32,7	<b>67.</b> 8	4,50	66.4	Brophy					
OFT OFT	1.00.1	cc.	62.7 06.2	oc.	7.00 2.10 1.05	00.8 1.85 00.8	Brakimore Baltimore					
02,2 03,	1,301 2,602 3,604 1,95	06.1	2.60 2.60 2.70	06,2	1.25 01.2 1.40	90° 8	Helle IsleBodie Gon Benton Benton Bodie Tunnel					
20, I 05, 05, 05, 05, 05, 05, 05, 05, 05, 05,	2.00 I	.90 12 32.2	1.15 224 2.70	20° I	1,60 1,00 1,00	06°1	Bulmer. Con. Va. & Cal					
E6 57.	8 00 8	.84.	62.8 67.7	00.4	2.50	00.7	Champion Chollar Coundence Con Imperial					
00.1 08.	. 32.	65. 02.	02° 02° 02°	99.4	09°	09°T	Caledonia Caledonia Con, Pacific					
02. I 00.	113 100 I	93.6 09.	00.E	06*	09°	68,	Central					
90° 90° 90° 90° 90° 90° 90° 90° 90° 90°	6.08.8	36 1	90.9	37.3 38.1	2.00	09.1	Dadley East B. & B Eureka Con					
86 80,	1 29 I	88.1 81.8 83	89 06°E 19°T	1.35 1.35 3.00 4.70	08.E	32.8 32.8 39.8	ExchequerGrand Prize					
00.2		****	2,00 1,75	06.1			гадерепдепсет:					
00.2 07,	1 02.1 1 04.1	č₽,I	1,70 1,70	99'I 04'I		03,1	Justice					
60.1 06.	900.2	08,	08.8		99.2	31.2	Kentuck, Lady Wash, Martin White, Mono					
	2.004	01.4	C/.**	50°F		00.*	Mexican					
	6 401 1 34 I	87.8 37.8	00°6	8.75 67.8	00°6	02,8	North Belle Isle	10.0				
0%, 08, 04,8 88.	5,004 8,85,8	GP*P	8.00	0ħ'ħ			Nev. Queen. North G. & O Occidental.					
98.8 04.	2,00,8	8,00 8,00 8,00	2,25	25.7 28.1 28.7	84 08 I	09"9	Potosi	I				
28.1 32. 00.1 00. 31. 01.	01° 04° 1 00° E	09°	30,1 33, 01,	G₽.	9T. 09.		Peer Peer Peer Peer Peer Peer Peer Peer	į				
25. 7.75 25. 6.25	9 39 E 04 E	2g. 2	52.2 3.80	08.4		01.4	Silver Star	Į				

## Sales at San Francisco Stock Exchange.

£820840	жепом эвск	089	0.70 Fc	Hale & Nor	cco
0Z.Z	O Lath.	092	\$000 B0	Comq & Cury	nce
06.6	Union Con.,	078	US. L	r:xcnequer	950
508	Sog. Belch :	280	08,88001,8.	Crocker Central Caledonia Con. Imperial.	08
508	Syndleate	TOO	958	Caledonia	200
270) 47 43 y d d d d d d d d d d d d d d d d d d	Sierra Meva	986	007	Central	325
ET@47	Savage	989	02.1	Crocker	400
976	Scorpion		49100461	Crown Point	562
06.4. GI.5.0.6. 18.0.68. 08.10.67.1	Peerless	400	822@822.	Con Va & Col.	OOL
48.0)48	Potosi	0 9	18	Ohollsr	074
al ene	Occidental.	100	200	Benton Con Booker Ohollar	160
66 %	Оуеттави	1120	02.2	Benton Con	100
F62016	xidaO	420	08.2	Bodie	900
606	Belle Ia	300	01.1	Вијиет	929
1.40 435065.4	Mey Oneen	0961	00 130 GE I	Baltimore	T000
OF E	OtavaM	000	1010101	Helcher	2380
00 P 026 04 8 07 8 05 8 07 8 06 8 07 8 06 8 07 8 06 8 07 8 06 8 07 8 07 8 08 8 08 8 08 8 08 8 08 8 08	Mono	120	10.	B. & Belcher Bullion Belcher	007
12611	MOTION WASH.	070	200******	Action of the Person	100
UU. #	Tooli Mooh	019	: 2000.2.		OZI
oce	String.	007	U1.1.	windes	100
07. I	o ustrace	020	61.25001.2	Alta Alpha Atlantic	TTOO
04. f	BWOL	UCL	14, 1861,	THESDAY July	H.T.
0, 1	Tomot	UNE	- LOOL PE		

### Our Agents.

Our Friends can do much in ald of our paper and the sause of practical knowledge and ectence, by sesisting facilities and eccouraging knowledge. We intend to send encouraging knowledge. We intend to send oncouraging knowledge. We intend to send oncouraging knowledge. We intend to send oncouraging knowledge. We intended to the facility of the facili

M. S. Perme.—All Immode Oo. R. G. Husrox—Butte, Montans. E. F. Sawra—Tamboidt Oo. E. E. Sawra—Tamboidt Oo. E. E. Writter—Themps Co. H. M. Hamiltox—San Meteo and Santa Cruz Cos. Arizona. —San Luis Obispo Co.

## Hopeful for America.

eigners in the U.S., inquired: "Or you be-eigners in the U.S., inquired: "Or you be-lieve this element could subvert this Govern-ment if it were thoroughly veganized for that Robert Collyer, the famous Liberal Christian preacher, is now in California for a sum-mer visit. An Oakland reporter, speaking

ment if it were thoroughly organized for that in the entire to thoroughly organized for that it were thoroughly organized for the purposes?"

"(100 not, 1 believe that it such a crisis should "timly and effectually. I consider the emergency arrive, the American will meet the emergency family agreeded man on the face of the earth can be inceed that the crucial measures necestary to effect his purposes, but when the time occurs and the earth conses he will assert himself with a power that will sweep all before him, leaving not a vestige will sweep all before him, leaving not a vestige will sweep all before him, leaving not a vestige will sweep all before him, leaving not a vestige will sweep all before him, leaving not a vestige will sweep all before him, leaving not a vestige organization of the merican principles by the enumeration of the agricultural districts, the mountain, plain, and any organization of the chief, for the true sentiment that will oppose, and ignorant bigors of the naites, socialists, and ignorant bigors of the metal oppose, to the mark of the metal oppose, the mark of the metal oppose, in the consistent of the mark of the metal oppose, the mark of the metal oppose, the mark of the confict of the mark of the comprehend the principles of our Government and they mistake liberty for license. They are not will be.

"A great deal is said about ameliorating the condition of the poor, but I do not believe in it they are the said about ameliorating the testing the testing the poor, but I do live pair they are the mark of the proof they are and and they mistake liberty for license. They are not well be.

to do so.

'Moreover, I am firmly of the opinion that to do so.

'Moreover, I am firmly of the opinion that the American is fully capable of decling with and forever settling this so called condict between the capital and labor, this antegonism between the laboring man and the corporation. The American will decide the question fairly and impartially.

I may be an optimist in these matters, but I am convinced that I am right, and the future will convinced that I am right, and the future will prove the correctness of my assertions."

### Mining Share Market.

The stock market has been rather lively this week, prices advancing a little to the satisfaction of bold-ers. The market shows more strength than for some time. It is stated that some promising feedback and burches of one have been cut by the prospecing drills in Belcher and Crown Point. At the pecing drills in Belcher and Crown Point. At the has one connection is one of great inportance. It will be of great value for the fine circulation of air it will also be of great value for the fine circulation of air it will also produce. Good ore has been found in a winze of great value for the fine circulation of air it will broaden to the fine circulation of air it will will broaden to the control and the share of the old Blue Wing stope.

The Savage mine is looking well. A streak of good ore 'bree feet in width base been dound in the upraise from M.O. 3 crossout on the raco level. This whole three-foot streak will average \$30 to \$40 a

whole three-foot streak will average \$30 to \$40 a foot whole three-foot streak will average \$30 to \$40 a foot The battery blocks in place, and the stone work completed at the new aster-mill of the Wevada Mill and Mining Co.; also the trame of the building which is to cover the period of the building which is to cover the period foots, and Hale and Morerosa. Ast the old bonasars mines they will soon be able to resume operations in the buildneaded section, for the maring the sour and they are only waiting for the ground to cool. The ore in that section should be maring that seam to test the base process of analgaring pulp direct from the batteries—that is, with maring pulp direct from the batteries—that is, with looking to the trunning of both mills by water-power looking to the running of both mills by water-power is being rapidly pushed to completion.

### New Incorporations.

The following companies have been incorporated, and papers flied in the office of the Superior Court Department to, San Francisco:

Mariposa Commercial, and M. Co., July 8. Mariposa Commercial, and papers flied in the office of the Superior Court Mariposa Co. Capital stock, \$200,000.

Directors, James C. Flood, Alvinsza Hayward, W. S. Hobert, John P. Jones and George R. Wells. Street of John L. Blevens, James W. Moyle, S. S. Tilton, John L. Boone and J. Scrivner.

Co., July 8. Capital stock, \$500,000. Directors, John L. Stevens, James W. Moyle, S. S. Tilton, Co., July 8. Capital stock, \$500,000. Directors, John L. Boone and J. Scrivner.

Co., July 8. Capital stock, \$4,000,000. Directors, John L. Boone and J. Scrivner.

Co., July 8. Capital stock, \$4,000,000. Directors, John L. Boone and J. Scrivner.

Capitales F. Crocker, Timothy Hoppins, W. V. Canting, W. V. Capital stock, \$4,000,000. Directors, not disconding to the easter line is not defined in the studees) and extend in a northwesterly direction through and extend in southern some little distance west on through in the morunians some little distance west of the studees) in the morunians some little distance west of the last stock, about 25 miles further north.

North Burna Vierra Oil. Co., July 11. Losalion, Kern Co. Capital stock, \$200,000. Direction.

MORTH BUENA VISTA OLL Co., July ir. Locstion, Form Co., Capital stock, \$500,000. Directors, C. Under Bimieri, P. Campodonico, E. Y. Lonigo and J. Pescila.

Patent Agency. Dewey & Co.'s Scientific Press



POUR U. S. AND FOREIGN PATENT ACENCY PRESENT FROM THE GRANT ACENCY PRESENTS IN THE BASENCY PARENT ACENCY FREED OF GRANT ACENCY CASENCY OVER A COUNTRY ACENCY OF STREET, BY TREED OF STREET, BY TREED OF STREET, BY TREET, BY THE PRESENT OF STREET, BY TREET, BY

S. F. Telephone No. 658. DEWEY & CO., Patent Agents. Aarket St. Elevator 12 Front St No. 252 Market St.

W. B PWFR, GRO, H. STRONG

-NCK VAING NEM

PHOTO AND WOOD ENGRAVING,

ZINCOGRAPHING, ETC., Wax Electrotype Engraving,

BY THE BEST AND CHEAPEST METHODS.

О и Мем Рнотоскарнотурев,

Made Direct from Photographs, for Newspaper, though and of Street Plants o

PHOTO-ELECTROTYPES,

PHOTO-ZINCOGRAPHS,

WAX PROCESS ELECTROTYPES,

LITHOGRAPHERS' TRANSFERS,

STEREOPTICON VIEWS,

COUNTERPEIT SIGNATURES ENLARGED,

LEGAL DOCUMENTS EPRRODUCED,

LEGAL DOCUMENTS EPRRODUCED,

Агзо, Рнотосялениис ои Wood AND Отнек

SPECIAL PHOTO WORK,

A. T. DEWEY, Manager. S. F. Рнотобратие Со.,

Office with Dewcy & Co., 220 Market St., S. F.



WINANS

(ESTABLISHED 1855) Anti-Incrustation Powder

Continues to lead; fully guaranteed. Removes scale from bolitics and prevents its formation. Send for circular with references, them which there are none better.

AVOID IMPATIONS.

J. C. WINANS, Agent,

Soft Montgomery St., San Francisco.

(Metcalf's patent). ORE CONCENTRATOR And no royalty, a Mew Kapid For Sale at Half Price, Address MES. R. G. KNOX, Proprietor, or MISS FRANCES A. DEAN, Principal. FFThe 16th year will begin Wednesday, Aug. 8, 1837. 1835 Telegraph Ave., Oakland, Oal.

School for Girls and Young Ladies

**EIELD SEMINARY !** 

Address J. H. TIBBITS, Astoria, W. Y., Long Island.

TRENTON, N.J. & 14 DRUMM STSAN FRANCISCO, CAL SWEDISH IRON WIRE, OF IRON & COPPER, FENCE WIRE, NOW STOPPER, FENCE WIRE, Telegraph wire, hard & Soft Copper wire RON & STEEL WIRE OF EVERY KIND. ELEVATOR, TINNED, & COPPER ROPE, SASH CORDS. GALYANIZED SHIP RIGGING, MINING, TILLER, JOHN A. ROEBLING'S SONS CO

## 00 CALIFORNIA VIGORIT POWDER

-NVNOEVCLORERS OF No. 40 California Street, San Francisco,

## NILHO-CTACEHINE

("DYNAMITE" or "GIANT")

Vigorit "LOW" Powder, Blasting Powders.

EOF REMOVING STUMPS AND TREES

WORKS: California City, Marin Co., Cal.

ED. G. LUKENS, Manager

The Safest and Strongest High Explosives in the Market. THE GIVNT POWDER COMPANY

CIVAL POWDER OF DYNAMITE

Of Different Strengths as Required.

10DSON POWDER IMPROVED. GELATIUE-DYNAMITE, Stronger than Dynamite and even Safer in Handling.

FOR EATLEOADS AND LAND OFFERFIXED. Is from three to for times stronger than ordinary Blast-ng Poweds, and is used by all the Railroads and Gravel Claims, as it breaks more ground, pulverizes bester and aves time and money. It is as dry as the ordinary Blasting Powder and runs as freely.

BYNDWYNN' NIETSEN & CO.,

GENERAL AGENTS, SAN FRANCISCO, WES SED LOSE 101 2816.

# **GUTENBERGER'S ROLLER ORE CRUSHER**

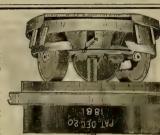
Crush 8 to 10 Tons per Day.

TOTTAL DATE TOTTAL DATE DIST.

WEIGHT, A TOUS.

It is a full fledged Quartz Mill without gearings, cose or pulleys.

Power applied direct, Works Ore at Low Cost and the cost of the cost



# PERFECT PULLEYS

First Premium Awarded at Mechanics' Fair, 1884.

CLOT & MET ELS.

Sole Licensed Manufacturers of the

Medart Patent Wrought Him Pulley

The States of California, Porgen and Nevada, and the Purifories of Idaho, Washington at the State States of California, Porgen and Nevada, and the Purifories of Idaho, Washington at the State States of California, Porgen and Nevada, and the Purifories of Idaho, Washington

SHAFTING, HANGERS AND APPURTENANCES

Practical Treatise on Hydraulic Mining.

This new and important book is on the eard con astrony and important book is on the present of Wisches, Finnes, Dame, Fipes, Flow of Wates, mothods of mining fablich and development of mines, records of blacers, history and development of mines, records of burdy-grandys, rockers, undercents, etc.; last of escubber methods of blacking; the conditions of the self-man and subsecting that the conditions of the self-man and man and subsections. A grand work for gold mines and users of water. Frice, \$6, post-paid for the conditions of the self-man and users of water and users of water. Frice, \$6, post-paid for self-man and users of water and users of water and users of Francisco.

This paper is printed with Ink Manufac-tured by Charles fines Johnson & Co.. 500 South 10th St., Philadelphia. Branch Offi-ces—47 Rose St., New York, and 40 La Salle St., Ohicago. Agent for the Pacific Coast-Joseph H. Dorety, 539 Commercial St., S. F.

LICK TELESOPE,—The large supporting oolum of the Lick telescope will arrive in San
Jose in a few days. It is 30 feet in higher and
Jose in a few days. It is 30 feet in higher and
Jose in a few days. It is 30 feet in higher and
They require two flat cars for transportation.
The ceating was made by Warner & Swasey of
is now almost in position, and constitutional progress has been made in the interior fixtures,
The telescope tubing, which is also being manufactured in Cleveland, will be completed in two
months.

Jours & Anthour are opening a new cost mine about two and a half miles northwest of the court two and a half miles northwest of the Grown Rock ferry, says the Fossil (Or.) Annual. There are several voins of cost, some Loos thick. The quality is thought to be superior to any yet discovered on the cosst. A superior to any yet discovered on the cosst. A tennel shout to the fell of the passing the hill. The cost reins dip down into the carth at any of a shout the cost tens dip down into the said as any is a specific of the cost tens of the cost of the cost tens of the cost of the cost

### Testing and Working Silver Ores

post free, \$2.00. Sold by Dzwry & Co., Publish

The Techno-Chemical Receipt Book

# NOW READY.

THE TECHNO-CHERNOLA. ECEDIFT HOOK—Containing the latest, and most Leeping for a latest through the latest latest through the latest latest latest through the latest la

HENRY CARRY BAIRD & CO., Industrial Publishers, Booksellers, and

importere, Paladelphis, Pa., U. S. A.

ASSESSMENT NOTICE,

Morris Beer Preserver Company.—Loca-

tion of principal place of business, San Francusco, Cal.
Location of workes, San Francusco, Cal.
MOTICE is bereiby given, that at a meeting of the Discount of the capital states of the capital states of the capital states of the capital stoke of the capital sto

## MINE SURVEYOR WANTED,

MOST BE THOROUGHLY COMPETENT San Francisco, giving references and experience.

DIVIDEND NOTICE,

The German Savings and Loan Society.

For the half year ending June 30, 1887, the Board of Divectors of the German Berings and Lean Society has Divectors of the German Berings and Lean Society has one-hundredthe (25, 60-100) per cent per amount on term deposits and three and sixty one-hundredths (2, 60-100) per to the cent per amount of the cent per amount

GEO, LETTE, Secretary.

# Iron and Machine Works.

CALIFORNIA MACHINE WORKS, W. 119 Beale St., - San Francisco WM. H. BIRCH & CO., BRACHINETS, W. 119 Beale St., - San Francisco MM. H. BIRCH & CO., BRACHINE WORKS, W. 119 Beale St., - San Francisco MM. H. BIRCH & CO., BRACHINE WORKS, W. 119 Beale St., W. 119 Beale S

Brodie Rock Crushers, Bydraullc, Steam Power, Hydraullc, Side Walk and Hand-Power BILR V 9 TO RE. Steam Engines, Flour Mill, and Mining, Saw Mill and Dredging Machines Brodle Rock Crushers.

Herefore of E. Henrickson's Faten Automatic total Carlos for Elevators. All kinds of machinery ade and repaired.

### SACRAMENTO, CAL. пиіои івои мовкв'

ROOT, NEILSON & CO.,

Engines, Boilers, Steam

Front St., bet. M & O Sts., Sacramento, Oal. Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired, MACHINERY FOR MINING PURPOSES.

-REMOVED TO-HALL'S BOILER WORKS

PRACTICAL BOILER MAKER T' A: HALL. 304 and 306 Beale St., San Francisco, Cal.

Smoko Stacks, Hydraulic Pipe, Oil or Water Tanks, Ore and Weber Buckets, Gasomeiers, Griders, Bridge and fron Ship Buldding. All kinds of Sheet fron Work. Re-pairing promptly attended to at lowest possible terms. Marine, Stationary & Portable Boilers.

## Golden State & Miners Iron Works.

Manufacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

Golden State Pressure Blowers. Mold-Board AMALGAMATORS,

First St., between Howard & Folsom, Ets.

THOMPSON BROTHERS,

29 and 181 Beale St., between Mission and Howard, S.F. **ENKEKA FOUNDRY** 

Williams & Orton, MANUERS OF GENEER.

Works, No. 315 Mission 8t., San Francisco. Special attention given to Woodworking Machinery, Steam and Gas Engines. Correspondence solicited.

MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

Address " Business Box A," office of this paper, Sa MINING EXPERT AND GEOLOGIST.

ROSS E. BROWNE,

Mining and Aydraulic Engineer,

American Exchange Hotel OT OD

per 20 & \$1.5 Coach. St., r from . 1 25 Free San Francisco, om Bank of Cal.

Engraving Superior Wood and Metal Engrav-ing. Electrotyping and Stereotyping The above Hotel is alturated in the midst of the Bank-ing and Commercial Houses of the city, and is by far the most home-like and desirable Hotel to stop at.

OHAS. & WM, MONTGOMBRY, Prop're.

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charters of Vessels for all Trades. Agents for Growers and Manufacturers. Charters of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products. General Insurance Agents.

Have correspondents in all the chief ofties of the United States, Europe, Australia, India, China and the principal states for the Company of the Principal States, Europe, Australia, India, China and the principal states for the Agents of the Principal States, Europe, Australia, India, China and the principal states for the Principal States, Europe, August States, India, China and the principal states for the Principal States of the P

General Agents for the Pacific Cosst of WATIONAL ASSURANCE CO., of Locion, Mass. ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass.

H. T. Scorr, Vice-Pres't and Treas. GEO. W. DIOKIE, Manager.

Location of Works, Potrero. P. O. Box 2128. Office, 216 Market St., S. F.

of the Cameron Steam Pump. STEAM. AIR. AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

Stants, Paus, Settlers, Etc., Etc. BARY HOISTS, VEUTILALING FAUS, ROCK BREAKKES, PULLEYS, Vertical Engines, Horizontal Coudensing Engines, Shartive, Shartive,

GEO. W. Prescorr, President. Irvine M. Scorr, Gen'l Managel

**UNION IRON WORKS** TRY OUR MAKE, CHEAPEST AND BEST IN USE,

Successors to PRESCOTT, SCOTT & CO.

HINCKLEY, SPIERS & HAYES, Proprietors.

Office, 230 Fremont St., [ESTABLISHED IN 1865.]

San Francis

MARIUE EUGIUES AND BOILERS. Propeller Eugines, either High Pressure or Compound --- WANUFACTURERS OF-

Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Compressors, Air Receivers, Air Pipes, MINING MACHINERY.—Hoisting Engines and

MILL MACHINERY.—Batteries for Dry or Wet Crushing, Amalgamating Pans, Settl. rs, Furnaces, Re-torts, Concentrators, Orce Feeders, Rock Breakers, Fur-naces for Reducing Orce, Waler Jackets, etc.

Mill Machinery, Saw Mill Engines and Boilers, Dra Machinery, Powder Mill Machinery, Water Wheels.

WORKS ORE WET OR DRY. Tustin's Pulverizer

OF ALL KINDS, ENGINESBOILERS

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGENTS FOR THE PACIFIC COAST FOR THE OP RVERT DESCRIPTION, BOILST REPRINGED TO SIGHT WORLD BOILST BOOK TO SIGHT OF THE STATE OF THE SIGHT OF THE S

Desne Steam Pump.

Corllas Engines and Tustin Ore Pulverizers. SPECIALTES:

CO. PACIFIC ROLLING MILL

[33]Z DAS ZOUITSEJ

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Cast or Wrought Iron in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE

LOCOMOTIVE AND MARINE FORGINGS.

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL, ALSO Steel Rods, from \$ to 8 inch diameter and Flatstrom I to 8 inch. Angles, Tees, Channels and other shapes teel Wegon, Buggy, at Truck Tires, plow Steel, Machinery and Speelal Shape Steel to size and larger, and and a steel to size and larger, and and a steel to size and larger, and a steel to size and the steel to size and the steel ste

Ta Orders will have

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

NOTICE TO

ENGINEERS, CONTRACTORS, WINING WEN

TUNNELING, SHAFT-SINKING, ETC. and others interested in

Engineers' Tables of Progress

WITH MAPS, ILLUSTRATIONS

AND FULL DESCRIPTION OF THE

NEM LOBK

Section 16x16 feet; Length 36 miles.

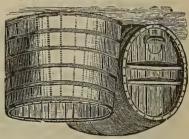
THIRD EDITION NOW READY. SEUT FREE ON APPLICATION

For Catalogues, Estimates, Etc. address:

INCERSOLL ROCK DRILL CO.,

PARKE & LACY, REPRESENTED BY

8 California St., and 21 Fremont St., sand 20 Galifornia St.,

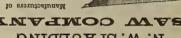


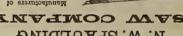
WATER TANKS, WINE TANKS!

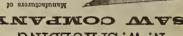
SO to 40 Spear St., FULDA BROS., Proprietors,

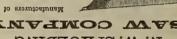
AT SHIP, MINING, and WATER TANKS a Specialty. The

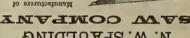
M. W. SPAULDING











Sporthand, Typewriting, Penmanship, Bookkeeping.

SAN FRANCISCO.

ГЕРК СТОУЕ МАИЧЕРСТИВІЙС СО.,

Ul our brand.

T' SOOPEZ' ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

Terms, Board and Room, \$1.00 per Day

HOT AND COLD BATES TREE. Laundry Free for the use of Families

This Five-proof Brick Building is centrally located, the Gestad and Palace Hotels, and close to all Steambo and Kailroad Offices, 44 Third Street, San Francisco, Cal

**MINCHEZTER HOUSE** 

ogue. 17 and 19 Fremont St., San Francisco

Of all kinds made to order. Send for Descriptive Cata

GAW MILLS AND MACHINERY

1881 SE 1882

Saws

откельки

CHISEL BIT

diooT battaenl

SPAULDING'S

BUSINESS

If you want a good pair of Gloves, ask your merchant for

CALIFORNIA WINE COOPERAGE CO.





















SAN PRANCISCO, CAL

(\$2\\\2000\) E' O' B' FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE MOV IN USE. Concentrations are clean from the first working. The wear and

The Mouran Course, Loudon, Loudon, Cother and Loudon, October 5, 1885.

Having tested three of your Frue Venners in a competitive trial with other machines we satisfied oursaless of the superiority of your Vanners, as is evidenced by the face of our having note of your warrants. Your remarkers of the superiority of your vanners with the property.

THE MONTANA COMPANY (Limited). W. B. —8lnce the above was written the 20 Vanners having been started gave such estislaction that 44 addi al Frues and more stamps have been purchased.

ery 20, 1885; September 18, 1885. Patout applied for, any 20, 1885; April 27, 1880; March 22, 1881; Fobru-

Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OR VANUING MACHINE. ORE CONCENTRATOR THE FRUE

# "(OO'OGG\$) FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the celebrated "Triumfr" Ore Concentrator possesses many advantages over any other style of Varmers, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the Sest manner; their trames being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built as compactly as their requisite strength will permit, weigh less, regular less freight space in boxes, by which their cost of transportation is reduced, and occupy less mill room when set up, Au important important important in the discharge from the feed and amalgam bow! The mining districts placed in front 6 and which the discharge from the feed and amalgam bow! The important important important important important in the discharge from the feed and amalgam bow! The important is in the reciprocal motion which is imparted to the intended and amalgam bow! The important mining districts taked when the stable in a stream of intended States, bearing evidence of the efficiency and superiority of this form of Concentrator, and we shall be shall be subjected bearing evidence of the efficiency and superiority of this form of Concentrator, and we shall be pleased to send Oirculars covering such letters of the considerable order.

Machines, and are ready to quote special prices for any considerable order.

JOSHUA HENDY MACHINE WORKS,

C M = M P

"TRIUMPH" ORE CONCENTRATOR.



San Francisco.

HUNTINGTON, E. A.

Nos. 39 to 51 Fremont St.,

CONCENTRATORS AND ORE CRUSHERS, Roller **TLIBUT** 

Mining Machinery of Every Description,

steam Engines and Shingle Machines.

SAN FRANCISCO, CAL. No. 45 PREMONT STREET,

MACHINE,

HYDBAULIC

IMPROVED This cut represents our

GIANTS.

оке скознек.

PATENT

LIFE-SAVING RESPIRATOR

and Salivation. Entirely Prevents Lead Poisoning

The most perfect appliance for people engaged in Sametirity. Dry Cushing, Gurano Works, Quicksilver Mines, Lead Corroding, Threshwing and Stock-drylug, and all other competitions where there is a Stock-drylug, and other people of the Machine And all of the Coupering Machine and similar work, they are indispensable, as no loneign substances, and similar The Weeping of the properties as of some people of the Machine And it is a set so old subject by approval after trial, and it not existence the properties of properties. The Machine School of per dozen, Seng post-paid to any address on receipt of price.

School and The Machine School of the Machine School of Machine School of School of School of Machine School of Schoo

JIA to 118 Fine St, — San Francisco.

Scand for Descriptive Circulars containing Testi-single of well-known parties who are at present using

**EOB WINES** HOISTING ENCINES

Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link

LIDGERWOOD M'F'G COMPANY,

PACIFIC COAST AGENTS, 96 Liberty St., New York.

MHEETS

IRON CASTINGS of all descriptions.

SAN FRANCISCO. PARKE, LACY & CO.

MEDAL AWARDED, MECHANICS, FAIR. AND RAILROAD CASTINGS. CAR CHILLED

Constantly on hand a full assortment of Manila Rope, Sisa foop, Tarred Manila Rope, Hay Booe, Tarred Manila Rope, Hay Booe, While Sec, ofc.

Extra sixes and lengths made to order on about notice
TUBBS & OO.

611 and 613 Front St., San Francisco.

THE RUSSELL PROCESS COMP'Y. San Francisco Cordage Factory.

NEW YORK OFFICE, 18 BROADWAY Extra elico C. A. STETEFELDT, President.

IMPROVED FORM

GERE. STEICHER & KERR, 14. OCCIDENTAL FOUNDRY, 137 First \$1., San Francisco, Cal.

The above out illustrates the IMPROVED FORM OF HYDRAULIC GIANTS, which we neture a All similar styles are infringements upon this form, and a judgment stands of record to that C. S. Circuit Court in the matter of Hendy and Fisher we. E. Hoskin et als. Welsine of the C. S. Circuit Court in the matter of Hendy and Fisher we. E. Hoskin et als. We then the proposed and the court of the C. S. Circuit Court in the matter of Hendy and Fisher we. Hoskin et als.

0E

HYDRAULIC

instead of two, it is of greater eagency and worked and of the law manufacturers of dark by the destruction of the factor and the dark of the dark of

T DIFFERS FROM THE OLD STYLE IN HAVING ONLY ONE JOINT instead of two, It is of greater capacity and more easily worked and

SAN FRANCISCO, CAL,

BALT LAKE CITY, UTAH.



PORTLAND, OREGON,

Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST.,

ENGINES and BOILERS. Machinery, Steam Pumps, Working Machinery gug M ood non

L. R. MEAD, Secretary.

WM. H. TAYLOR, President,

HEINE SAFET

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

DURABILITY,

.еап пі wоп темоч езгон 000,00 AND FACILITY OF INSPECTION and REPAIRS. ECONOMA

Guaranteed More Efficient than any other Boller made. Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Jute Mills, and other places.

MITSONS BYLENI GYS-BEDDICER,
MITSONS BYLENIG MYCHINEKA [01 Steamspips, Browerles, and Collars,

STEAM BOILERS of all descriptions.
SUGAR MACHINER—Steam "Labels, Marine Bans, Clariflers, Double Effects, etc.
STEAMSHIPS—Steam Tachts, Marine Engines and Boilers, Serow Propellers, Centrifugal Pumps, Steam
Pumps, Steam Capteins, Cargo Winches, etc.
Pumps, Steam Capteins, Cargo Winches, etc.

BULLDERS **BOILER.** WATER TUBE

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Rossting Furnaces of all kinds.

AIR COMPRESCORE—Gold and Silver fransmission.

MEDUCHT RON WATER PIRE a Shecialty.

PROUGHT RON WATER PIRE a Shecialty.

SAW—MILL MACHINERY of all Hinds.

SAW—MILL MACHINERY of all Hinds.

SAW—MILL MACHINERY of all hinds.

SAW—MILL MACHINERY OF SOME Works Company, San Francisco.

SAW—MILL MACHINERY OF SOME WATER PIRE a Shecialty. More—Have just completed order for 35 miles of a SAW—MILL MACHINERY OF SILVER.

SAW—MILL MACHINERY OF SILVER SILVER SILVER AND STREET Safety Boller (Water Street Machinery).

SAFE MACHINERY SILVER S

GREGORY & CO.

IMPORTERS AND DEALERS IN ALL CLAUSES OF

# MACHINERY

SOLE AGENTS FOR

SOUTAL ENGINES, AND HORI-ATLAS ENGINE WORKS ENGINES ENGINES' HOIZLING

San Francisco, Cal.

OLLO SIFENT GAS ENGINES.

DISZLOWS CIRCULAR SAWS. ROBLING INTECTORS AND RIEC-NATHAN AND DREYFUS OILERS. VND NVCHINEKA.

TANITE CO.S. EMERY WHEELS JUDSON ENGINE GOVERNORS. PICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY,

H. W. JOHNS, ASBESTOS PACK-TVNE VND BODIEK SVM MILIS' IZG CO', RUBBER GOODS. MEW YORK BELTING AND PACK-

YACHT ENGINES.

# ENCINES SUG BOIFERS

MASSET'S STEAN HANNERS. BOLLOWAY FIRE EXTINGUISH-ERS.

BRADLEY CUSHIONED HAMMERS TURBINE WATER WHEELS.

SHIMER MATCHER HEADS.

STURTEVANT BLOWERS

ELRIN BAND SAW BLADES.

WEBBER CENTRIFUGAL PUMPS. bombe, improved ste.

BEMEUT & SOU'S MACHINISTS TOOLS,

CHINISLS, LOOFS' NEM HVAEN WVNNE,G CO',S MV-

MACHINERY. WOODWORKING

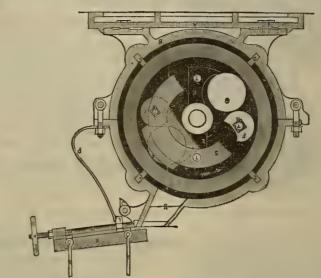
N. A. PAY & CO.'S WOODWORKING

Cor, Fremont and Mission Sts.,

FROM 2 TO 100 H. P., ALWAYS IN STOCK

MILL SUPPLIES AND LUBRICATING OILS,

EKIZBEE-LUCOP



# A CENTRIFUGAL ROLLER

FOR WET OR DRY-

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of smalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 600 pounds wet.

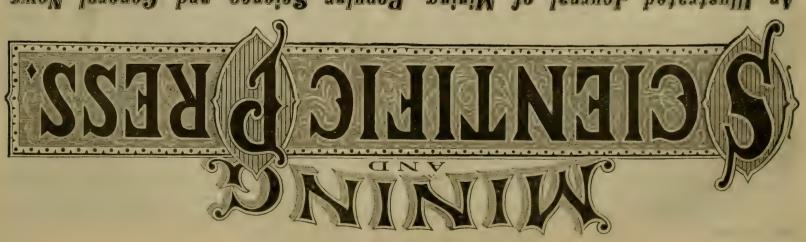
All wearing parts easily and obeaply replaced. May be seen in operation at the Mew York Metallurgical Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, furnished on application.

THE FRISBEE-LUCOP MILL CO.

Office, 145 Broadway, cor. Liberty St., Programmer YORK.

HOOKEE & TVMBEACE' Gen, VLents'



### Mumber 4. SAN FRANCISCO, SATURDAY, JULY 23, 1887. Illustrated Journal of Mining, Popular Science eneral kews.

running streams, and all down the spinner Das agairqs driw banods assem edT with immense messe (table-lands), at altitudes of 2700 meters and upward, which are covered with dense forests of pine and other hardy

.eonabance. Mexico City ni bunol si retaw ,ebis the cordillers, particularly on the western Contral R. R. The nearest towns are Hua- country with limited rainfall. Still further gine to ascend again, until the esstward slopes Still proceeding southwestward, the traveler besues its sinuous way to the City of Mexico. slong which the Mexican Central R. R. pur-

Sierra Mojada, or nearly on a level with it. Toward the northeast is a mountainous, broken and this region must be more elevated than the stroke and trend that the region must be sought until the wast central valley or plateau is found, which might afford a supply for artesian wells; trending generally from southeast to northwest,

The Sierra Mojada mining district is in the State of Coabuila, Mexico, about 70 miles in an air-line from Escalon station, on the Mexican Slerra Mojada Mining District.

yasm edt to wet s and for this reason only the searcity of water, ai toirteib adt ai anoita -reqo lasiguallatem baegainim edt ot Mosdwarb Rio Grande. The great and stretches away to et a few isolated points, tate of water except and little known. The desert is wholly destibetidadaiau tsomla cry is an immense des-Sierra Mojada, the counthese points and to the the eastward. Between Coahuila, 112 miles to and Chatro Cienegas, in about 125 miles west, jaquilla, in Obihuahua,

:ora llow naisotra na These facts we gather .berote

son, and dams are built

rains in the winter sea-

water. There are heavy

ed. Only one company of the sale s large supply of

companies his discussion of the subject. The conditions necessary to with the map which acregion of supply for that district. We give hereartesian wells, and the discusses the subject of neers, in which he also tute of Mining Engi-·itan I nasiram A adt erot from a paper read by Richard E. Chism be-

vations formed by their upheaval is approxi-ti but from southeast to northwest, But it of the stratified rocks and the trend of the elethis part of Mexico and its geological charac-teristics, it is found that the stroke or direction wells, considering the geography of Mojada, so of course its water supply is pre-carious. As to the region of water supply for abale, stressian water is need-ed; and the boroperly, locat-ed and deep enough ot aterts ralimis redto of a point viniog edt and conduct it between -or teat in gaiggorotaco gion to absorb the water region of supply; a per-

41700 э ч о н э 1 ₹<u>0</u>57∀ ONO 123 0 S 0 NILSAY

to feet the water bear. MAP OF A PORTION OF MEXICO, SHOWING SIRRA MOJADA DISTRICT, AND PROBABLE WATER SUPPLY.

by boring. The discussion is given rather fully in Mr. Chism's paper, because it is applicable to The discussion is given rather fully probability of receiving water in Sierra Mogada it has some subterranean outlet, so that this outlet may pass under the Sierra Mojada. Mr. Ohism concludes that there is only a remote presence on the surface. The dimensions of the sump are very great." It is concluded that In some years it does not rain at all at Sierra, northeast is the Rio Grande, which stream of a great cordillers are reached, and, still as- ceives so much water shows few signs of its tees in the same sink.
This district which re-

mori

about 160 miles, termin-

river Aguanaval coming a drainage sump. The

-ret bas selim 85 tese to tabim edt ai setsaim

makes a right-angle bend and flows north-

about 100 miles, then

lo sonstsib a vol tass

Thence it flows southof our explanatory line.

314 miles to northwest

Sierra, at a point about

in the toothills of the Besar Tovir sidT .sesaM

drained by the river

tant band ow and that to first on oit of that

face drainage by the aid

•nd examining its sur-

to the Sierra Madre,

gainauteA .ti deniege oally, the chances are at least five to one

rook, although, practi-

conveyance through a permeable stratum of aoiseuosib vebau

Mojada, from the source

be obtained in Sierra

retically impossible that is, therefore, not theo erred to, he says : "It

eology of the region re-

виср в виррју сви ре ек-

erra Mojada from which

·iS to sonstsib eldanos

region within any reavalid Sierra Mojada, ylao ed ei ti taft bas

needed for an artesian

sation of auging states water water egnar erbaM

geoopt is at tolerally self the the the

facts (which we have condensed from the pa-per referred to) Mr.

evoda edt to weiv al

After discussing the

to ylqqua a

noiterolqxe to enil

Tuo Taen di

southwest

looked tor. ed yam abajeM arreiS rot resum maenarredua lo in the State of Darango, and from this a supply Madre of Mexico, the southern continuation of the western Rockies, This elevated region is cending, he goes to the summits of the Sierra

Passing southward over the mountain chains near the mining district, a succession of mountno hope for water from the northeast. below the level of Sierra Mojada. So there is east, and renders it impossible that lower ones should pass it, unless at a depth of 1300 meters cuts off all water-bearing atrata at a higher entranged and and some from further north-

mately from southeast to northwest. But it less the mining district, a succession of mount- sine and valleys of lower altitude are passed, of the region we have under consideration, other Mexican mining districts so situated. The Sierra Madre is particularly well

from which the drift resulted there must have prevailed thermal conditions prevailed chances localitions dulife similar to, if not positively identical with, those of the present time. The belief or nonbief of the story of Nosh having, in obedience to the command of God, preserved the material for restocking a drowned world, must ever remain a matter of religious faith, but that there main a matter of religious faith, but that there has occurred a deluge such as that described in the book of Genesis is succeptible of demonstration as positive as any other fact which may be established by analogical reasoning. There are various geological phenomena logic cold with inexplicable under any other theory. The ally inexplicable under any other theory. The stion of such a deluge world is a deponate of the various deluge while there was a sition of such a deluge world is a deponate and a such a deluge world is a deponate and a such a s

EDITORS PRESS:-The Black Range Lixivia-The Black Range Lixiviation Works.

menced operations May 23d and completed the test run July 5th, running through 140 tons of test run July 5th, running through 140 tons test ton July 5th, running through 140 tons to tone of the lack of the sand defective machinery, proper management and defective machinery. The man it of experience, The man in the want of experience, The man in the want of experience, The man in the want of experience, The man in lead of the that the conducted from the want of experience, The man in lead of the the test of the test of draft he was pectual test of copper, and the sulphase of or open, the sulphase of the company in the leaching the company in the leaching the company the company held a site of the copper in the rectipitated the copper in the precipitated the confidence, Sul 5.50 to 65 onnees, \$15.50 to 100 onnees, \$14.50 to 65 onnees, \$15.50 to 65 onn test run July 5th, running through 140 tons of tion Works are a complete failure. They commenced operations May 23d and completed the

### FOIGSTLY.

Hotestry, and the State a meeting of the State Board of Forestry will probably soon be held to consider the important measures which the board has now in progress or in contemplation, and to decide upon a line of work for the common of Australian tree-seeds, obiedly Educalyptus, was distributed in the southern part of the year and the southern part of the plated to establish a forestry experiment stated for platting-out will be made. It is contemplated in the enghborhood of Santa Monies, Los plated to establish a forestry experiment stated to establish a forestry experiment stated from the contrement of the State. Atturally, the Board would look first to the extreme south of the State because of the lack of forestry experiment as mother station will be established in the upper of the State. It is reported that the work another station will be established in the upper of the Commission in stopping timber outling of the Commission in stopping timber outling of of suppers and other, particularly the burning of of the Commission in stopping times outling as the interest of timber to contrence, particularly the burning of of empers and other. This is the maint reason for the organization of a forest guard. As far its will be paid for performing this duty; but its will be paid for performing this duty; but the sum of the contrer of make it still more effective, the servative will be said to probe of compers and other performing this duty; but the will be said to propose from all persone residing in the timbered portions of the sone residing in the timbered portions of the sone of volunteers will be responses from all persone the states and the sum of the case of volunteers and other and the sone residing in the timbered being the source of suppersoners. The sum of the sone of suppersoners is the sum of the sone of suppersoners are sourced. The sum of the source of volunteers are only the source of volunteers will be

Liseems after all that no Arbor Day has been established for California. The Legislature established for California. The Legislature passed the bill fixing Washington's Birthday as Arbor Day, but the Governor falled to approve it. The bill may have been attended by provisions which he did not favor, but we cannot see what objection there can be to enrolling provisions which he discriming the may progressive Stakes of the grant progressive Stakes with the general interest which the peoveral interest which the general interest which the grant factor and the factor an

Captal. Punishment by Electricity.—The Senate of Pennsylvania has peased a bill providing for the infliction of capital punishment by electricity. There are several devices in existence designed for such work,

the C. and C. shaft and descended to the 1750foot level and entered the Sutro tunnel. Ore
is being taken out by the Con. California and
Virginia, Yellow Jacket, Grown Point, Beltcher, Kentuck and Overman. The Sutro
all ore worth \$40 per ton. The Otollarpotest, Respect as royalty of \$1 per ton on
all ore worth \$40 per ton. The Chollarpotest, Bavage and Hale and Norcross are
yielding over \$40 per ton. The Otollarpotesting to take out ore. They have been
preparing to take out ore, They have been
taking out some ore, but have not been crushing. The Chollar-Potest is putting up a large
ing. The Chollar-Potest is putting up a large
the Virginia and Gold Hill mines. It did desiin
from 9,000,000 to 10,000,000 gallons in 24 hours,
but since the stoppage of the combination pump
th taince the stoppage of the combination pump
th taince the stoppage of the combination pump
th the Con. Virginia and Gold Hill mines. It did desiin
trum the California mill by use of Petton wheels,
run the California mill by use of Petton wheels,
run the California mill by use of Petton wheels,
was to make will come out through the Sutro
waster, which will come out through the Sutro
tunning a drift
to so be such the total control of the control of the
the Sutro out so out the Sutro
the Sutro Tunnel Co. is now running a drift
to the Sutro Furch and the stopper and the surface to the surface of the surf the length and breadth of the land, but the length and breadth of the land, but the length and breadth of the land, but the land of shipments of anch large amounts of but little would in the large amounts of but little would be stated they way, it is they begin to feel that way, it is a rare thing for them to be satisfied with an will fully confirm the least office. They will fully confirm the least office. They will fully confirm the last office. They will fully confirm the whole thing to the grand they will fully confirm the sufficiently large with out any facilities the standard the will fully and the world the grand they will fully and the world the grand they cannot be standard to the grand they will fully any search the will fully and the world the with the world the will also and the world the will the grand the will fully any of the grand the will the grand the world the will the grand the will the world the wor

run the California mill by use of Pelbon wheels, They will use 3,000,000 to 4,000,000 galone geveral thousand galone out through the Satro Tunnel Co. is now aronaver mill and the connect which will come out through the Satro Tunnel Co. is now aronaver inclined to the fallation purposes. The Chollar lectine for ventral thousand galone of water daily. This and ill send out the Satro Tunnel Co. is now training a drift in the center of the Mexican cluster incline in the Satro throat can be called and Chollar best and Belcher, in the Satro the main trannel, passing through a property of the Mexican Guota and Curry, Best and Belcher, the state of the other incline throat the main trannel and the content was started Oct. 12, 1869. The north laters and California, and Ophir shelf drift through a point Belcher, and the Comerce of Co. 18, 1869. The other main trannel in a distance of Co. 18, 1869. The troub can main trannel and the Comerce of Co. 18, 1869. The content with the Comerce of Co. 18, 1869. The content and the Comerce of Co. 18, 1869. The content and the Comerce of Co. 18, 1869. The content and the Comerce of Co. 18, 1869. The content and the Comerce of Co. 1869. The content and the Comerce of Co. 1869. The Comerce of Co. 186

last there apppears an editorial under the heading of "The Early Denuding Forces," In that article it is stated that we cannot conceive of

HOTTORS PRESS:-In your issue of May 24th

Early Dennding Forces.

have years paste, and aspeciately order processors of the present outful.

The Alice Company has, for the past seven years, been reducing about \$5,000 tone per years, been reducing about \$5,000 tone per annum. This amount regularly handled by annum. This amount regularly shows at one that stamps are not often hung up.

The number of employes on the mine and work, 260. These of men on the underground work, 260. These of men on the underground work, 260. These of men on the underground work, 260. These precing, and consist of miners, earner, station, tenders, imbermen, etc. The top force at the hosters, machinets, or preparers, lastions.

Pecting, and consist of miners, earners, station, tenders, imbermen, etc. The top force at the hosters, imbermen, etc. The top force at the station of the reduction works is about \$6. The money and the reduction works is about \$6. This makers a total of \$80 men and it is oftener more than less, as the employment of extra men is occasionally necessary.

A Winers' Hospital and Beading-Boom, where the other is and it is oftener more than less, as the employment of extra men is occasionally necessary. A Miners' Hospital and Reading-Room.

There is in connection with the money by accountry factors and Reading—Room.

There is in connection with this mine, supported and maintained by a monthly due spied by a concident. There is the comploye, a longitative where they streen titled to the bestof care in case of accident. This tied to the bestof care in case of accident. This is certainly a fine and on the company and a the sunshine for the dark. This is certainly a vise provision and is worthy of imitation by the more do work on. Thus they provide in the crompenses in the vicinity of the incorporated companies in the vicinity. The men do not miss their contribution of \$3 per month, and among so many there is sure to be some who will neglect to provide for more of the incorporated companies in the vicinity. The men do not meet a fine to provide for more than a success is evident, for the hospital formed increased so much through economical management in the reading room. This was done and they man accidents, that it was a confortable room, a nucleus for a line at the sealing room. This was done and they have a comfortable room, a nucleus for a man have a comfortable room, a nucleus for a line at the evenings in a quiet and instructive man. This furnishes all who wish to spend the the vernings in a quiet and instructive man. The vernings is a quiet and instructive man. The vernings is a quiet and instructive man. The Officers of the Company.

The Office and of the capacity of doing so with facilities for man, and they are all the deadly of the company.

The Officers of the Company.

The Officers of the Company.

Joseph R. Walker of Walker Brothers, bankers, at Salt Lake, is the president, and he is
increast of the Alice Company. A number of
the superintendent, Mr. W. E. Hall, goes thor,
times during the year he comes here and with
the superintendent, Mr. W. E. Hall, goes thor,
oughly over the mine and works. His many
years' experience both as a mining man and in the one
pany point that may be of interest to the company point that may be of interest to the company point that may be of interest to the company to know and act upon. Truly he is the
pany to know and act upon. Truly he is the
file of the incorporation and make will be
outerprise.

On the selected him as the promoter of their
which has selected him as the promoter of their
time past, is another selection that shows the
wise discrimination of the company directory.
W. E. Hall, resident superintendent for a long
willing, and there is no place on either mine of
milling, and there is no place on either mine of
milling, and there is no place on that shows the
milling, and there is no place on that shows the
milling, and there is no place on the activity
of the selected him as the promoter of their
him whole time is devoted to the company
are theory to deprive the property of benefit,
fars interests, and nothing escapes his attention
fars is a such a such place on the serionly,
larly careful, a desirable specialty certainly,
as a quark miner's life is fully hazaroous
enough when all the deprive the proqueds, and
looked after.

Mr. Hall's residence is on the grounds, and
looked after. The Officers of the Company.

They have reached the 700-foot level. Here, also, at each 100 feet, at a foot out and count of the feet, at a feet of the feet of the feet of the feet out and crossours arm, and the lead thoroughly operated. Ample provision is made for a stoping and room to operate the large force of men and room to operate 80 stamps supplied for wery days work. The Magna Charta and Valdamir are worked from the same shaft, being connect. Under the same root with their pumping engage and on the feet part and all and the feet of the fast property of the feet of the fast feet of the fast property of the feet of the fast feet part at compressors and at a diffusion of the fast part free feet of the fast feet part and the fast of the fast part free feet of the fast feet for the fast of the fast feet of the fast feet of the fast feet for the fast of the fast feet of t

At present consist of the "old mill," as it is usually styled, of 20 stamps. This is the original past of the one by the Walker Brothers before one the one by the corporated, and is a complete dry-orushing chloridizing aliver-mill. This process yielding the best results in the ores around Butte, is the one in sults in the ores around Butte, is the one in general use.

larly careful, a desirable apociatly octabily, as a quarks minet's life is fully hazarones as a quarks minet's life is fully hazarones or quarks when all the details are carefully looked after.

Mr. Hall's residence is on the grounds, and his good lady is one of the foremost in all age. Mr. and Mrs. Hall are highly respected by those who are so fortunate as to be neighbors.

Mr. Hall has the bappy faculty of securing the beat material in the country for sentence before earling as he man in a see mill foreman is one man in a safe back years of experience before coming thousand, and certainly could not be replaced, and back years of experience before coming as he had years of experience before coming thousand, and each he dot the reduction department, I should say he was invaluable. On the heart, and as the head of the reduction department, I should say he was invaluable. On the thoughout was in the workings William Shood is fully superstion is largely due, as he is personally familiar with every level, coasedu, wines, and in operation is largely due, as he is personally familiar with every level, coasedu, wines, and it will be workings. When we contion of ore to keep the large plant continually familiar with every level, coasedu, wines, and it will be seen at once soatsered to the four points of the compass, and thoughout the 13 miles of tunnels and crosser cuts there are in the mine, it will be seen at once the there are in the mine, it will be seen at once the the compass, and counts there are in the mine, it will be seen at once the the counts of the counts of the counts one.

here, and Mre. Hall are piggly respectively of the second that we cannot conceive of the head of the second that which in the country for assistance of the production of the best material in the country for assistance of the production of the best material in the country for assistance of the production of the percent of the production of the production of the percent of the production of the production of the percent of the production of the production of the percent of the production of the production of the percent of the production of the production of the percent of the production of the produc general and the orea strond Brate, is the one in the orea brothed in the orea brothed is general and.

The new 60-stamp mill is also a fully equipped dry-crushing chloridizing silver-mill, and is enactive to reduce the cost of handling at large amount of the cost of handling a large amount of ore to a minimum. In both the another, saving all the extra above westermills the mills the one is at organized mills the mills the ore is at organized mills the mills the cost of the cost of

I think that in many osess our local papers, in their a think that of when the product of the camp sasume manmoth proportions and to surprise the vertant pilgrims who may be "within our borders," take the avoirdupois of bullion shipped and figure it up at a flotitions value without any regard for the finences. As it is, without any regard for the finences are trequently copied in papers through.

## **CORRESPONDENCE**,

We satirfy, unindersed, opinions of correspondents.—Eds

(Concluded from our last.)

Written for the Parsa by our Correspondent, R. G. Hustox.]

Is named after the first promoters of this enter-prise. Walkerville is now a thriving village of at least 3000 people. It is, to a certain extent, tributary to Butte, as all towns are that are built oless to a main distributing point, but all the propose of trade are here represented.

their enterprise. Since May 15, 1880, they have millione in the formers. Since May 15, 1880, they have millione in have disbursed a sum exceeding the millione in soin, for the purchase of property, for labor, and general expenses. They have paid their stockholders nearly double as much paid their stockholders are three mines in the and indeed there are but three mines in the among the start shad the large amount monthly, an inconceivable amount no good can be done, and it cances many a heart to throw with joy to see the start and stripes run up on the company, and payday, when each individual will be remuer. Seed for the "sweat of his brow," and he in turn will be eabled to flying the insulation of seed ways are largely divided; some are prudent in own sweet will may jead him. As usual, the owner sweet will may jead him, As usual, the owner are sufficient of stripes in the barner of the interest it as and deposit in the bark for a rainy day, while his and deposit in the bark for a rainy day, while others, according to the parlance of the others, according to the parlance of the contrary, "blow it in "in the most expeditious of the contrary," blow it in "in the most expeditious of the parlance of the parlance of the contrary," blow it in "in the most expeditious manner possible.

sum of money in the prosecution of work on their enterprise, Since May 15, 1880, they

ng the past ten years, disbursed an immense all branches of trade are here represented. Large monthly sales are made by the different merchants here. The Alice Company has, dur-

The Reduction Works

The Town at the Works

The Alice Gold and Silver Mine.

only be regarded as evidence of its cocoling. The much will begin to cover a considerable part of the solar globe. The will begin to cover a considerable part of the solar globe.

From control of control, the obscurity will pecuses fred the control of cover a considerable part of the obscurity because gradually increase, but not regularly, because gradually increase, but not regularly, because the liquid increase, but not such cover the cover will be replaced by new formations sink, and will be replaced by new formations in liquid increases of the such control of the mighty flames districtly the entire surface of the star deficient and bear and bearing the cooling invested the fact of the fact incremittent and pallid rays disappear forcet, Already we have seen Sc stars as a sear and its extent of the space of the special part in is only a star and must suffer the fact of and is only a star and must suffer the fact of and is only a star and must suffer to the fact of the special the fact of the special will be but as in immense world inhabited by strange between inger. Then the sufficient inger in the sufficient inger in the sufficient in the sufficient in the sufficient in inger. Then the sufficient inger is norming. Then the sufficient inger is norming. Then the sufficient inger is norming. Then the sufficient inger is norming in the sufficient in inger.

Will continue to revolve around it, until the solar early Tombe will continue to revolve around it, until the solar republic in the inexorable transformation of gives place to other speceme of worlds, to other speceme of worlds, to other souls. Such is the descript of the same and of all worlds. Shall we conclude the sare with the evenienment of existing globes, the surviverse will be at some time on once than the universe will be at some time on one of the that of the universe will be at some time of the that of the universe will be at some time of the than one of the order order of the order or

The Sweet Gum,

The Earth Was Born. It Will Die to the the shall have been green, or when its vital elements shall have been spent, or perhaps by the extinction of the same sum in whose rays its existence is asspended. It may die by the shock of a celestial body which it might meet in its parth, but this end of the world is the most improbable of all. It was die, we say, by the slow absorption of its may die, we say, by the slow absorption of its waster and the sir are diminishing. The ocean, waster and the sir are diminishing. The ocean, like the stmosphere, appears to have been much more considerable than at present, The cream, only the earth is penchasted by the wasters, which more considerable than at present, The curle the globe at the library to describe the globe at the describence of the wasters; but the absorption will continue of the substance of the wasters; but the absorption will continue out a mitrogen and carbonic soid, which compose our attrogen and carbonic soid, which compose our absorption.

The Redective Mind and substance as slow absorption. the obsiletes covered with mysterious hierospecies of Karjo Sanding on the palass of the straints of the course of the straints of the straint

Queternery Age

(The existing age), we see that the iteration of depth reaches the period must have have lacked 300,000 years. What is this birtery of life where; appear to and the primordial more than which has required 300,000,000. The storic branch and the primordial more than a compared to the total history of life at a prospers to another incompared to the total history of life at a prospers to another incompared to the total history of life at a prospers to another likewise a slow and the primordial more than a propertion. The Redective Mind as a conjudity, while its exterior temperature and the primordial manufacture and

THE SWEET GUM OF THE SOUTH-Liquidamber styrecifius.

reaches the state of the add, to represent the state of t

Origin and End of Worlds.

[Translated for the Peres from Diario del Hogar by M. M. M. M.]

The following is an extract from a recent lecture by the eminent French astronomer, C.

How many years has the sun been revolving!

ing mass may have been that of water, the heat of condensation would have sufficed to produce an elevation of temperature of 28,000,-000 degrees Centigrade (Helmholtz and Tyn-Granting that the specific heat of the condens-On the hypothesis that nebulous matter may have been in its origin of extreme tenuity, the quantity of heat engendered by the fall of all these moleculus toward the center which has produced the solar system, has been calculated. Oranting that the specific heat of the condens-

Heat is an infinitesimal, vibratory movement of the acondrate vibratic placed into more the actions, and heat converting tised into more tion, and all heat converting tised into more present the action added (and muotion into heat. This condensary is the action added (and muotion the best original temperature of the sun and the original temperature of the planets. If this brilliant densation that should diminish its diameter by account the constant of the condition to cover the loss of untrity 2000 years. In the present the emission during 2000 years. In the present described of the emission, the solar heat produced by the temperature of the emission during 2000 years. In the present still last 20,000,000 years. The measure of time exacted for the condensation which the primitive abuls underwent to form our planet.

The occupants in the supplementation.

The compute it by thousands of millions of centralists and the stability of centralists of the stability of centralists and the stability of centralists of the stability of the stabilit Heat is Only a Mode of Motion;

The state of state

A substance of carbon formed radimentary
A substance which herdly deserves the name of organic, as it was not merely mineral, nor yet regard, as it was not merely mineral, nor yet regard, as it was not merely mineral, nor yet regetable, nor saimal.

The substance mown progress. The primitive animals were now in progress. The primitive animals—the acophytes, the elemental mollusks, the process of formation. Insensably, from century to century, the planet lost its roughness, the conditions of formation. Insensably, from century to century the planet lost its roughness, the conditions of the planet lost its roughness, the conditions of the planet lost its roughness, the conditions of the planet lost its roughness, at first obtuse and rudimentary, but the planet lost developed and perfected, it was the planet lost lost and rudimentary, but the planet lost lost and perfected. It was

rights of the control of control of the control of

And the cultivated trees. This period does not represent one-hundredth of the scale of time. How these magnificent contemplations argament the ideas that we habitually form of nature! We imagine that we ascend very high into the past when we behold the ancient pyra-The Human Species

The sweet gam of the South is inexpressible by headeomer then the short dum, and the short of the south. It is from a highly prised tree of the South. It is from a highly prised tree of the South. It is from a highly prised tree of the South. It is from a highly prised tree of the South. It is from a header report of Dr. Vasey, United States and Southern Mixtoo. If the state of native in the state of the witch heavel family (Hammer theore in the contract of the witch heavel family (Hammer theore in the contract of the witch heavel family (Hammer theore in the contract of the witch heavel family (Hammer treat, compact form and bright, glossy, start in all contract of the witch heavel hea

Admire the Beauty

Of terrestrial nature—the great nills, the person of the mountains, constraints of the many fine of the surface of the mountains, the mountains are not the mountains of the nature—the bold visduces and the mountains of the mo

## Selling the Climate.

much inferior to ours; being, everything considered, not much better than that from which os si erente etimolo decarace the climate there is so as productive as the average land to be found in this State. Why do not these people who are seeking new homes go and settle on these exceeding I obesp and tolerably good lands, a large proportion of which are well wooded and the more easy of access than California of the seeking that I california and the more easy of secess that California are seeking and the more easy of secess that California are seeking and the more easy of secess that the control of the seeking and the seeking and the seeking are seeking and the seeking and the seeking and the seeking are seeking and the seeking and the seeking are seeking are seeking and the seeking are seeking are seeking and the seeking are seeking are seeking and the seeking are seeking and the seeking are seeking are seeking are seeking and the seeking are seeking are seeking and the seeking are see sections of the country, much of it being quite There is land in abundance open to eettlement elsewhere. There are millions upon millions of acres to be had at Government prices in other are to the incoming immigration a greater and the case. attraction that and advoc or si, final ed a final and the case. That the climatic conditions existing in Califorthese strangers the climate, it is said, and throw the land in. While not exactly true, there is, evertheless, a modicum of truth in this saying. about Californians seeking to make in their dealings with the new-comers to the State a commercial commodity of our climate. We sell A good deal in a jocular way has been asid

prehensions of sudden death from sunstroke, tion, a thing possible of attainment only in the belt of country lying between the Sierra Mevada and the sea. No longer terrorized with apand the sea. energies. After having been thawed out they ought to be kept in a comfortably limp without being again reduced to an entirely fluid condithe freezing and the frying processes to which they have all their lives been subjected, they require now exemption from these sudden opportunity to recongerate their large and opportunity. Ветwееп si tnodiw reger without it. improved climate alone, the majority of them most in need of; for, while they cannot live on in search of, and, being able to find the bost only here in California, they must expect to pay for it. It is the one thing these people are It is an improved climate these emigrants are they are seeking to escape.

ation and sorrow. If there is a country in which human life enjoys immunity from these fatalities, it is certainly the duty of all to seek matter for levity, but the rather for commiserbe spoken of lightly. Six hundred persons prostrated by sunstroke in the space of three are, more than 200 killed outright, is not a ot gaidt a ton ai etamile ainrelifa tue sidt le was a strong and steady, and what was was be doned what when you be strong as defore a physical wreck will become a purfection.

In view of the experiences had during the past few days by the inhabitants of the Skates east of the Roschy mountains, the greater safety is any experience, the strong was the strong and the strong was the strong and the strong and st lightning, and the many other fatal agencies to which they have so long been exposed, the nerves of these misfortnastes will be-

here prevail. can be purchased elsewhere, but rarely ever paniment of the land. Rich soil and fine views by the acre, is worth a good deal as an accomearthquake country! Truly the climate of California, though it cannot be bought and sold as si sidt taat seasado yleides seis edt teg bas 10 estemilo edt ylur! Truly the courter ning, sunstroke and earthquakes put together, ceeded during three days of the present week all that have ever occurred in California from light. alties of that kind on the entire Pacific Slope since it was inhabited by white men. The number of deaths in that city from such cause exon the 18th inst, than have been lost by casuthere a refuge who are able to do so. More lives were lost in the city of Chicago

fessor. His inaugural lecture on the opening of the London School of Mines had a very wide the mining interests of the world than the Proand has filled that position to the satis-faction of all, few having done more to advance Smyth has been Chiet Inspector of the Orown mines of Great Britain for the past 30 years, of the honor so justly paid to him will be re-ceived with great pleasure by his numerous friends scattered all over the world. Prof. Mines, England, has been knighted. The news of the mines of the Crown and the Duchy of Cornwall, also Lecturer of the Royal School of the Royal G. S. of Cornwall and Chief Inspector ton W. Smyth, F. R. S., Foreign Secretary of the Geological Society of London, President of Houses to a Mining Man.-Prof. Waring.

are again to use petroleum as fuel, and are now being fitted up for this purpose. THE Southern Pacific ferry-boats on this bay

> as so continued since.
> As for the Gold Hill end of the Comstock, ber, came to be attached to the entire lode, and

run when, in the month of May, 1859, the Ophir strike occurred. some 10 or 12 of which were being successfully it, began to crush the rich rock in arastras, having first cleaned out the small ravines about rich quartz since known as Gold Hill, and, said to have had any discoverer. The placer miners on Gold canyon having worked to its head, came there upon the moundlike mass of where the first find occurred, it can hardly be

Eberhardt mine, one of the richest deposits of silver ore ever found in Nevada, is, we believe, Although a good many of these Gold Hill pioneers are dead, we do not know that more than two or three of them ever came to an unfinely or violent end. The d'scoverer of the

tend to not only invalidate but explode it altotheory here propounded are so numerous as to Looking to California, the exceptions to the still slive. Had he come to any especially tragic end we would most likely have heard

and, taking their treasures, returned to their old homes without meeting with serious accinauts to this State apeedily enriched themselves, joyed for many years, as some of them still do, the fruits of their good fortune. Thousands and tens of thousands of the early Argo-Bidwell, the Murphys and other of the pio-neers in our virgin diggings took out bushels of gold, and, retiring to their ranches, there envend to nee or, and age discoverer of gold in gether. Marshall, the discoverer of gold age, died this State, having lived to a good old age, died peacefully and from natural causes. Redding,

guese, is all there may be of this supposed fatal gift of good luck, at least as regards rich mines of the more timid and cautious; and this, we solves to fatalities that fall not to the lot strikes and grand discoveries exist are apt to be bold and adventurous men, who, careless of danger and reckless even of life itself, expose gions where the best chances for making big rant this popular superstition, it may be looked for in the fact that the prospectors of new redent or mishap.

In so far as there may be anything to war-bedoned

## Co-operative Mining.

eficial slike to the stockholders and the workingmen. The Tuolamae Independent says:

It is a most sensible and excellent contract to all concerned, under the present circumstances, and we hope developments may be tilled we hope development of the parties in the showing of a largely paying property and permanent employment of the work. The worky and permanent employment of the work. The work in the snoeth and employees have a mutual interest in the snoeth in t pany, which is co-operative in its nature, ben-eficial alike to the stockholders and the work-Mountain, Tuolumne county, in this State has commenced running sgain. The miners there have made an arrangement with the com-The Guartz The Hesley mine at T

netto bluos seinsquos edt tadt mess bluow ti ment made in this case, but it is strange that We are not informed of the exact arrange-

a co-operative principle.
A mutual interest in the success of the entercould frequently help matters along by working day's work for the men, the miners themselves do much detter by giving the men some contingent share in the profits. In some or two prominent mines furnish the and the company are so closely connected that than in mining. The interests of the miner the co-operative principle be better carried on done. It would seem that in no business could something of the kind is not more frequently

the company, especially if, in case of succ their reward is increased proportionately. the project a success if they have an interest in the result outside the mere day's wages. They can afford to take a little risk as well as prise is established in almost all mining vent-ures, for if the mine fails, the men get out of work. The men will do all they can to make

A RAILEOAD from the Count d'Alene mines to the Oregon Railway and Mavigation line is protand Heela produced 2839. THE Michigan mines produced 3801 tone of fine copper in the month of June. Of this the

The Fatal Gift of Good Luck.

'gaionsmor'' to elqmexe boog vitary a flesti ni deinund ot bise ed yem noiter number of them as bere reported are so little consonant with the actual facts that their narness of this theory numerous cases in point are cited by our contemporary. While the most of these cases are no doubt correctly stated, a to come to an untimely and generally a bloody end, or as the saying is, "to die with their boots on." By way of establishing the sounddesigned to show how very apt the discoverers of rallable deposits of the precious metals are the heading, " Romance of Gold," an article There appears in one of our exchanges, under

they bear. Virginia City was called after the pseudonym of Finney, but not the Virginia mine, the ledge which he discovered and located after the two States whose respective names mines, which mines were subsequently called Belcher north to the Ophir, comprising what is mow the Consolidated Virginia and California White and Murphy, the sides the Kinney and the Central No. 1 and Central No. 2. They cove-ered the grunnd extending from the Best and edt beman need guivad beteienoe ti deldw to cated, the section thereof lying below and to the east of Finney's ground was taken up, the claims stock lode proper having been discovered and lo-The next year this northern portion of the Comthat point were very bold, it was at first sup-posed to be the principal ledge of the district. salled the Virginia, and as the croppings a feet to the west of what was afterward known as the Cometock lode. This ledge was by him ledge running parallel with and a few hundred of Virginia, had by his companions come to be nicknamed "Old Virginy" On the 22d day of February, 1858, Finney located a claim on a ferred to was James Finney, who being a native from an overdose of bucking mule near the town of Dayton, Nevada. The person here re-Comstock lode was named, came to his death whom the Consolidated Virginia claim on the For instance, it is by the chronicler of these sad events related that "Old Virginy," after

as our chronicler has it, nor did we ever before hear of his having been called "Old Pancake," ре тап'я пате was Henry, пот " Thos. Раке," Cometook is for the most part correct, though Thota of berrefer referred to about

enill retaining its original name.

Standard mine, for the reason that there never was any "great" Standard mine, the Standard triot that bears his name, but not the "Great" ver generally applied to him. William Bodie did discover the mining dissaw ysa ot entinev ew doidw noitallegga na

1860, and not because he had distinguished himself as a mineral discoverer. It may be, as stated, that Farrell and Homer, lo remmus edt ai sasibal et U i G edt lo sbasd Col. Storey, to commemorate his death at the was any green because, having been dis-mine, such as it was and is, having been dis-covered long after Bodie's death, Storey county, in the State of Newada, was called after

within their limits exceedingly rich deposits of the precious metals, but if so the fact remains Lake and the Homer districts may contain wobsald deposits of notable value. The Meadow insemuch as none of them ever discovered any tinent to the question here being considered, Homer districts respectively, "followed in the enicial tracks of Comstock," but it so we cannot see that the late of any of these men is perthe discoverers of the Meadow Lake and the

and which, being amazingly rich, brought the Nek McLaughlin made the strike on the Ophir ground, one and one-half miles further north, nearly two years before Peter O'Reilly and Patchannel was discovered and successfully worked than once through the columns of this paper. The Gold Hill end of the Great Washoe ore erom ebam need zaivad zaibaelaim oa taen name, that is an error so often explained that it seems strange intelligent journalists should continue to repeat it, the proper correction of a As for Henry Cometock having been in any sense the discoverer of the lode that bears his to be demonstrated.

parties. In the conveyance, the property sold having been described as a portion of the Combatock ground, that name, for the want of a bet- posed. this ground, sold it again soon after to other said to have been its discoverers. Henry Comstock, having afterward bonght a portion of great lode, is concerned, these two men may be locality into sudden and wide notoriety. So far as this, the most productive section of the

Ferdinand Moll, an old miner, once worth \$70,000, but now, through speculation in stocks, a pauper, went insene at Xreka last week and was sent to the Stockton saylum,

A. T. DEWEY. CIENTIFIC D RESS MINIME

DEMEK & CO., Publishers.

Office, 220 Market St., N. B. cor. Front St., S. F. T. Take the Elevator, No. 12 Front St. T.

Torma of Subscription.
Annual Subscriptions, \$4. Age subscribtions will be declined without cash in advance. All arrearses must be paid for at the craft of \$8,50 per annual.

Advertising Rates.

Large advortisements at favorable rates. Special of sading large advortisements at favorable rates. South of a sortier dependent a sortier deserved in the special rates. Four insertions are rated in a month. Address all literary and business correspondence and Drafts for this paper in the name of the firm. Per Line (agate) ...... \$ 28 \$ \$ 20 \$ 5.00 Half month. Smos. Per Line (agate) ..... 1.60 4.00 10.00 \$2.00 One inch .... 2.00 5.00 14.00 45.00 do inch .... 2.00 5.00 14.00 45.00

Entered at S. F. Post Office as second-class mail matter our lakest forms go to press on Thursday evening

SCIENTIFIC PRESS PATENT AGENCY

DEWEY & CO., Parent Solicitors.

Saturday Morning, July 23, 1887.

### TABLE OF CONTENTS.

EDITORIALS.—Sierra Mojada Mining District, 49.
Passing Fvenick, The Faskal dived to Coperative Mining; Selling the Climate, 52. The Colling to Climate, 52. The Colling Moles; Elecuticity for Quartz Mill Powder, 53.

ILLUSTRATIOMS.—Map of a Portion of Marcio, Showing Sierra Mojada District and Probable Water Supply, 49. The Sweet Gum of the South, 51.

Electricity, Generated by Water Powder, Applied to a Riccio, Quartz Mill, 53.

Quark mul. 385. CORRESPOULEMOE.—The Alice Gold and Silver Mine; The Sutro Tunnel and the Comstock; Early De-nuding Forces; The Black bange Lixivistion Works,

Fairs of 1887; A Curious Tree, 55.

MEOHANICAL, PROCEESS.—Tibrous Steel—
New Metal, Ameaing Small Tools; American vs.
English Axes; When to Olean a Boller; A New Annealing Process. Acc. MISOELLANEOUS.-Forestry, 50. Origin and End of Worlds; The Sweet Gum, 51. The Coming

Ing Process, Ow.

SOIENTIETO PROCRESS.—The Three Forces Pysics, Vittal and Payoring; The Rolling Contact of Petrolemn; To Preserve Fence Postleand Generation Off Petroleum; To Preserve Fence Postleand Generation Office, of Petroleum; To Preserve Fence Postle Old House, Soil Clay for Contact of Petroleum; To Preserve Fence Postle Old House, Soil Clay for Contact of Petroleum; To Preserve Fence Postle Old House, John Preserve Petroleum; To Preserve Petroleu

of Petroleum, To Preserve Fence Posts; Solidification of Petroleum, To Preserve Fence Posts; Solidification marking Water Tanks, etc.; Black Varnish for Iron-Branching Water Tanks, etc.; Black Varnish for Iron-GOOD HEAL, TH.—The Cancer Discussion; "The Kinfle and Fite," A Simple Carre for Ethermatism, Sorval and Sony; The New Marker Prese, 55.

MINING SUOM MARKET—From the various counties than the Sorval and Sony; The New Marker Solidies, 196-7.

MINING SUOM MARKET—From the various counties than the Water Strong Sorval and Sony; The Sorval and Publish Worker Strong Sorval and Sorval and

## Business Announcements.

Job Printers—Cubery & Co. Arc Electric Lights—Electric Development Co.

### Passing Events.

and have already established a large business.
This iron ship-building industry will in time
be among the foremost of the industrial pursuits any class, from a small coaster to a man-of-war, The second steel steamer ever built on this coast was lannched from the shipyard of the Union Iron Works this week. These works are now equipped to build iron or steel vessels of

than ever before, and the gold yield of Califor Old mines are being prospected. The quarks and mectiones old mines are being prospected. The quarks and new ones are being prospected. They sood account of the State are giving a very good account of themselves this year. They are being worked more intelligently and economically worked more intelligently and economically. every day growing in popularity and in extent. on this coast.

The quartz-mining business of California is

attracting more notice, and new tracts in most of the counties are being settled up. country are improving at the same time. The central and northern parts of the State are also towns are being laid out and old ones improved. On all hands are practical signs of prosperity. Water-works are being laid out, botels and railroads being built, and values are increasing. Of course there is much speculation going on, but the real interests of the course they are improving at the same size. State still continues with unabated vigor. New nis is increasing year by year. The "boom" in the southern part of the

The instruction in mining and metallurgy is draw, drawl, glans, drawellings and sheetches of mines, furnaces, ec., to., to., gestier when extends working results are are are a constructions and references are of saving diamonds and the relative amount street at each place. The table shows the result of working 10,090 leads of "blue" from The following table shows the different ways The College of Mining.

the student may have a ready means of follow-ing up any subject for himself, constant refer-ence is made for details to the best technical

oollege must satisfy the following conditions: To obtain the degree of Mining Engineer, the candidate must be a graduate of the College as they may be prepared to enter with the joint regulations of the faculties at Berkeley. But the candidates for the professional degrees in this California, students who may not be able to take the full undergraduate course may attend such classes in mining, metallurgy and assaying

In the College of Mining at the University of

ite regular undergraduate course.

nesotice in the field in the course chosen, em gainim to notionstruction of mining maof Mining of the University, or give evidence satisfactory to its Faculty of having successfully pursued a course of study equivalent to

actual practice in the neur and memoir apon and must show, by an original memoir apon some subject bearing upon this profession, his some subject bearing upon this practice. This chinery, blowpipe assaying, and political economy. He must have had at least one year of also pass a satisfactory examination in the fol-lowing subjects: Mining, ore-dressing, petro-graphy, soonomic geology, thermodynamics (ele-

degree will not be given earlier than three

eisylana bna Suives

modynamics (elements), drawing and construc-tion of furnaces and metallurgical machin-ery, and political econ-ony, In all other reblowpipe assaying, ther-Engineer must pass an examination in the following subjects: Metallurgy, ore-dressing, aslanguallateM to sergeb edt rot statibuan A

cations in surveying, physics and analytic the course in examining typical mines and mechanics, which in their turn serve as a smelting works in various parts of the State.

taught in the quantitative chemical laboratory, atory and to obtain accurate results before an-other is treated. Since the wet methods are dent is required to work the metal in the laborserved for graduate study. In assaying, the treatment of each metal is explained by lecture, following which the stu-

or need evad slatem nether they been re

duction of the ores of lead, silver, gold and quicksilver. These have been selected as the metals most intimately connected with Califor-

or edt vot esse ni sbodem tastrogmi edt lis to treatment of all the metals, the rest of the un-dergraduate work is devoted to a detailed study

French and German. In the course in metallurgy, after the general consideration of the subjects which concern the

literature, standard and ourrent, in English,

the vecetion tripe of the student may be made more directly useful to hint. In order that

in operation in California and Nevada, so that

possible. The illustrations and references are drawn from typical mines and reduction works

most attention is paid to fire assays. Students! this depth two shatts, of 7 feet in diameter, just is to be carried down through the 75 feet of basaltic rock, which lies near the surface. From ornow any convenient stream to the point where the mill is placed. Any miner can readily see what an advantage this would be seeds. Water-power is abundant in this State, but not always at the point where a mill is the contract of the seeds. "The circular shaft, of 21 feet in diameter,

ng the mine. The method of constructing this fail as tel-

diameter, is being sunk for the purpose of work-

About 1000 feet from the north boundary of the De Beers mine, a circular shaft, 21 feet in

Oircular Shaft.

ground galleries at a depth of 380 feet and from about the center of the claim.

This ground was excavated from the underyield on an average two-fifths of a carat per load.

mounted to nearly 2000 loads, which would

sreenings, which were redeposited on the floors Total actual finds that the coarse, cylinder II of the coarse, cylinder

the De Beers Mining Company's property,

which is a part of the De Beers mine

2011/20-20 and do speed the galaxy or ni baue (172 and 2011/20 and

-sa Zaideuro edt Zai erated by water-power, to the purpose of drivtion of electricity, gentralasian colonies which; is sure to be followed; to si in the spiliesthe Phonix mine, have an example to the Austerprising proprietors of Messrs. Bullen, the entadt gaivargas edt oela the Government, we take the following con-base the following con-bas distributions and Mines, a very useful work just published by busias Well to sood Upper Shotora, Otago, baaR off rom the Hand mine, Skipper's creek, ztranp zinsod edt no ei ning by electricity for the past two years. It

etis oitusmor teom bas donard basd-tagirent ao encioaqa a ni qu bet Inlituaed a no aniblind The dynamos are fitchinery.

регеміть:

RAOUS

In New Zealand they have had a mill run-

that the power can be carried for several miles

could be done, of course, but no one has had the enterprise to try it. A great advantage is

his power. There are many places where it

altim-straing quivity to to too to the house of the word be well as the constant of the contract of the contra

Electricity for Quartz-Mill Power.

The new steel steamer Premier, built for the Canadian Paoific Railroad Co., was launohed Wednesday from the shippard of the Union

beam, 10 feet I inoh hold. Her registered tone base is 209 tons not about 250 tone gross. Her engines were built by the Fulton Iron Worke and sre I4 and 28 inohes, compound, with 20 inch stroke, and she has an 8½-foot with 20 inch stroke, and she has a bi-foot brage, San Pedro and San Diego lumber trade, and has a carrying capacity of 240,000 feads, and has carrying capacity of 240,000

pletion the steamer will run on Puget sound. Iron Works. The bull is all steel. After com-

stadies are pursued with
special reference to subsequent practical applithe course in examining typical mines and be sunk 220 feet through the black shale to the over the lotty spur that separates the branches, are to the lotty spur that separates the branches, are to the lotty spur that separates the branches, and analytic

ntilized in this State as well as elsewhere. rent is reconverted into the moving power, ported like an ordinary telegraph-wire, on poles, and at the battery the electric curwater-power is two or three miles from the batthrough two strong inon pipes, with a pressure of about 100 feet. The dynamos are no about 100 feet, and ospanion of Mr. Evans, of divising S5 or 30 read of stars and stars and stars are the strong stars. of two or three miles from the Phonix battery. The dynamos are worked by two Pelton wheels, driven by a splendid fall of water directed

all right as her destination.

The machinery built by the Fulton Iron
Works for the large new terry-boat of the South
Paoisic Coast R. R. is being put in position.

The steamer is 265 feet long, 75 feet beam, and
The steamer is 265 teet long, 75 feet beam, and utilized a California wheel to give the power for these dynamos. The plan is a good one, and there is no resson why it should not be which turns the wheel that drives the stamps.

evaluate these people have tery, and, it may be, at a lower level. The ourrent is carried from the generating dynamos to the bettery by a thin copper wire, supway of driving ordabing machinery in situations where steam cannot be raised for want of fuel and where water-power is available. Here the of stamps. The success of this system at the Phenix mine opens up new possibilities in the

-Ino rebun sera egraf a bus senim guiyaq yuam Er Dorano County has at the present time

tivation. Thousands of acres are still available for homes, and the genial climate and fruitful soil is highly conducive to fruit-raising.

UNITED STATES INSPECTORS FREEMAN AND

her the finest and stanchest ferry-boat on the 16 feet depth of hold, with a carrying capacity of 2500 passengers. She is being built by day's work, and no expense will be spared in making

She made the ocean voyage safely and arrived

here by the Golden State and Miners' Iron Works, was towed down the coast to her desti-nation at Ballona harbor by the tug Hercules

The mammoth dredger La Ballona, built

Foundry Notes.

scription is sunk in preference to a rectangular shaft with compartments. Its cost must great-

I sm at a loss to know why a shaft of this de-

will be picked away, as the building of the lining

The black shale between the two 7-foot shafts

ward to the surface, is to be built of dressed stone, reducing the 21-foot diameter to 18 feet.

rock as a foundation, the lining of the shaft, up-

face. A circular shaft, 18 feet in diameter, is to be sunk into the hard rock. On the hard

hard rock, or some 300 feet in all from the sur-

SECTIONAL ELEVATION

seed that of the latter, and its neefulness

will be much less.

tises to the surince

ELECTRICITY, GENERATED BY WATER POWER, APPLIED TO A QUARTZ MILL.

A new steam schooner for the ocast trade, and HILLMAN are at San Diego inspecting the steam-named the South Coast, was launched this week.

The South Coast is 141 feet over all; 32 feet Humboldt bay, and inspect the steamers there.

rim of the pan and is deposited on the waste dumps. The diamonds, together with the heavier parts of the matrix, are taken from the pans, placed on tables, and sorted. quartz is about 2.6. The diamonds settle to the bottom, while the matrix, being of less specific gravity, flows over the inner side or so that the diamonds will settle to the bottom of the pan. The specific gravity of the dia-mond is a little more than 3.5, while that of pan with sufficient water to make it quite thin, feet in diameter. The pulp is fed into the outer edge of the

or disintegration.
After the "blue" has become pulverized, it

are of iron and resemble somewhat the agi-tators used in silver-mills, except that they have a central discharge. They are about 10 to undergo further slaking. The pans is hauled to the pans and put through revolving screens. The fine stuff is put through a pan, while the coarse is sent back to the

gaistals to secont of the process of relating

rolled with heavy rollers (six tons), and harlies there for several months, being wet from time to time by means of a hose or sprinklers,

The "blue" ground is hoisted to the surface and haloes," where it is spread out to the "thorse one foot, It

Method of Saving the Diamonds. [No. 5-CONTINUED.]

Strican Diamond Mining.

in the prescribed order, otherwise the student will find himself seriously embarrassed in his

begin with general experimental chemistry, in-organic and organic, followed by analytical chemistry as an application, viz.: qualitative, quantitative and blow-pipe analysis, anbjects indispensable to anbsey-rent work in testal radian and seaving a paraires and a proper-The studies in chemistry and allied branches

inal designs in the drawing-room, followed by working tests in the mechanical laboratory. This important series of studies extends through the whole four years' course; and initia necessary that they should be completed it is necessary that they should be completed in the research of the study of the student of the stud

strength of materials and hydraulies with orig-

made by the student, physics with physical problems and work in the physical laboratory,

tive geometry is connected with work in the drawing-room, surveying, with extensive field practice, and the mapping of surveys actually

is observed with other studies; thus descripmeans for discussing such subjects as strength of materials and hydraulies. A similar sequence

T h e mathematical

the other, onemistry and its allied branches.

ao bas ;saoitsoilggs sti

hand, mathematics and with mining; on the one

all industries connected

ensies langed arebom to siese out the bild doidw

do sedenard eseds ni gni

course, the student re-

ed by the average stud-ent in four years. Pre-liminary to the strictly technical studies of the

Mining may be complet-

The andergraduate of T course in the College of

omy. In all other re-

of Mining Engineer. required for the degree spects the conditions are those

up in the senior year, when the student has had sufficient training in the general and propera-tory branches to study them with profit. and assaying peculiar to this college are taken lurgy and assaying. Having acquired a workng power in chemistry, the student begins the
study of mineralogy, which is developed with
special reference to its bearing on mining, and
is followed by a course in geology.

The technical branches of mining, metallurgy
and assaying negalist to this college are taken
and assaying negalist to this college are taken

SCIENTIFIC PROGRESS.

[Written for the Press.]

The of the view of the presest of the presest of the view of view

The Conservation of the services of the state of the stat

The London Ivonnonger gives the following report of a feet last the following report of a feet last the first the following report of a feet last the first case one to see the first the first the first case one to see the first the first the first case one to case the first the first the first case one first case of Mesers, Bedford's ax, when the first the first clear the case out the case the first the first the first the first the first the first case of Mesers. Bedford's ax originally used was put said, and one was undernaged after the fore, but clear the following the first f American vs. English Axes.

personning and tested at least once a good place of the court.

"Make it once in aix months and you will be nearer the truth for a large portion of the bolists of the courty."—Molifice T.

It is very evident that the writer of the first paragraph never "tackled" Ohio or Mississippi water or used it for making steam.

With clear pure rain-water a boiler may be run asfely with inspection and eleaning at long must be inspected and cleaned at shorter in relevasis. In using water from many of the rivers in In using water from many of the runtited to run more than to literal and eleaning.

No engineer worthy to be called such will attent and eleaning without inspection and eleaning.

No engineer worthy to be called such will attent to operate any boiler, with any water, for aix months without inspecting and cleaning.

No engineer worthy to be called such will attempt to operate any boilers, with any water, for aix months without inspecting and cleaning.

No engineer worthy to be called such will attempt to operate any without inspection of strength inspection.

Budionary Englisher of causes, and cleaning the engineer in coloring insist on looking into and carefully inspecting this most dangerous and cleaning.

Suttionary Englisher and carefully inspecting this most dangerous and carefully inspecting the most dangerous and carefully and any carefully and the most dangerous and carefully and the most dangerou

The following has been going the rounds:

"Every steam boiler, for whatever purpose employed, ought to be opened, cleaned, thore oughly examined and tested at least once a fact." \*\*\*\* The content of th

When to Clean a Boiler.

forge as slowly as possible, and then take two freboards and lay the hot steel between them and server them up in a vise. As the steel is and server them up in a vise. As the sains the pieces of wood, and is frunly imbedded in an almost sir-tight charcoal bed, and when taken out cold will be found to be nice and soft. To repeat this will make it as soft as could be wished.

MECHANIGAL PROGRESS.

Tibrous Steel-A Men Metal.

What is termed a new metal—a "horous at the termed a new metal—a "has recently been produced and pate anted in England by Mesers, Dorman, Long & Oo, and Mr. Howson of Middlebro'-on-flass. This new product is exciting consider. The interest among the iron-masters of Emgland. The makers, according to a recent left for published in the \*American Manufacturer, hold that the new metal is well adapted for armorrplates—in the manufacture of which the pile has to return to the fire so often—since the silicious coating of each fiber protects it, it is silicious coating of each fiber protects it, it is silicious coating of each fiber protects it, it is claimed, from the action of the fire, where pure iron would perfish. For the same reason it since we might be used, it is inferred, for the bigs of soft pate to the bigs of the fire the bilges of shown that the piles.

The Inventor's Description of the Mew Metal.

The new metal was discussed to some little actent at the recent from and Steel Institute the recent from and Steel Institute meeting. The new little meeting. The invention was introduced by Mr. Howson in some remarks which he easel in the discussion upon the paper of Mr. Gongreaves Works, near Birming. Allan, general manager of the new British Iron ham. Mr. Howson stated that with respect to company, Congreaves Works, near Birming. Allan, general manager of the new British Iron ham. Mr. Allan to the difficult of the condition of the condition of the condition of the difficult. There was an old meethod did not purify it, by first granulating it and did not purify it, by first granulating it and then drawing it afterward. It was granulated in waster, and it had been done, he supposed, so times.

Granulating Steel Instead of Cast Iron.

It cocurred to Messra. Thomgo It Long of Inspect It to the state in the deal of Messra. Thomgo It cocurred to Messra. Thomgo It is also be at first granulated, but that it should at first be made into steel and then granulated first be made into ase tried with most perfect success and many tone had been made. The new steel was of the most delicate fibrous character. There was no difficulty whatever in the steel was of the most delicate fibrous character.

Treatment.

Oriticism Dgon the New Metal.

The criticism passed by Mr. Allan upon the new metal was not very complimentary. He remarked that he understood that Mr. Howson referred to a process of granulating steel—simply having the steel in a number of grains—insert here putting it into a furnace and balling it up afterward. Mr. Howson treated it very much as a puddled bar. It consisted of a series of a palle surrounded by cinder. He should not like to give that material a name—in fact he did not know what it was.

Perhaps an Inspection of the Material

Mr. Allan's Process Perhaps an Inspection of the Material Institution of the Material Itself, such has now become possible by the infractuction of samples into Staffordshire, might broad-tion of samples into speak with more respect. I shall not be doing him as injustice when I point out that of course he had a new fibrous point out that of course he had a new fibrous the price of Mr. Allar's composite metal is something like 12s. 61. per ton additional to something like 12s. 61. per ton additional to the price of dordinary ingut steel would perhaps the price of ordinary ingut steel would perhaps tell against it in the market compered with Dorman, Long & Co.'s new mixture.

In the part of the cost of the

apecialties that extra cost will be borne.

The Properties of Mr. Allan's Composite affect from Bateel and Iron.

Mr. Allan introduces his iron barsinto his ingois by fixing them in a cage, the size of the into the side dimensions of the ingot mold and into the unoccupied spaces of which the molben steel is unoccupied apaces of which the molen steel is like in from the bottom. Mr. Head at the last throman and Sheel Institute meeting said that the meeting said that the meeting specially a new thing. The flast the cinder into the steel whole remained there and cinder into the steel whole remained there and conder on the steel whole remained there and there and here and she with the steel whole remained there and there and for a sory considerable extent, destroyed its tended to assist its welding properties. It slee, so a very considerable extent, destroyed its on year, and the statute of the material would render it very useful for wet iron, etc.

The New Metal for Boller Manufacture.

The president, Mr. Daniel Adamson of Man.

The president, Mr. Daniel Adamson of Man.

chester, declares against the material for boilermaking as a competitor to mild steel. He states
that he should be very reluctant to use plates
of this composite character, because from his
early experience he was led to the homogeneous
early experience he was led to the homogeneous
metal by the many troubles that he got in the
laminations of wrought iron as manufactured
both in Staffordshire and Yorkshire; but with
both is Staffordshire and Yorkshire; but with
the cast ingot properly worked there was no

of this composite character, because from his composite character, because from his composite character, be set in conjugate by the many troubles that he got in the set in sealing wire consists in conjugations of wrought iron as manufactured wire upon a hollow metallic core or dram, imbedian in Staffordshire and Yorkshire; but with he captured and Yorkshire; but with he captured and there was no set in seal the capture statement of a set in seal that the wire the wir

Psychic.

The Three Forces-Physical, Vital and

are constantly running down to a lower plane for power, the latter by a radiation of a high heave, the latter by a radiation of a low heat in coelestral apaces. There is, on the whole, the red is a lower by the radiation of a high heave, the latter by a radiation of a low heat incestore, as Professor Wm. Thompson has designation of energy, in destructible, which produces gradual augmentation and diffusion of potential energy is incestructible, which produces gradual augmentation and diffusion of potential energy strong he ansterial and extract it of potential energy strong he are a natural energy in the anterial and extract condition of the vast universal at condition of the vast universal at the condition of the vast universal energy we must condition of the vast universal at the present condition of the vast universal at the green and the following:

The application, therefore, must, in relation in structure, as induced under the wise direction across of the the formation of energy in considerable among the accordance with the inductive become of God with whether the wind the design in struct accordance with the inductive become to the following.

The application, therefore, must, in relation to God with the atoms of an attention of the formation of energy to the whole, have been very inconsiderable, or the whole, have may hereafter the formation of sensitive the considerable which we are fundered as the food with the constant of the formation of sensitive the analysment of the formation of sensitive and electual in the force and with the considerable will the complete design of the work which we are impressed with the considerable will be too strongly of pane of the following will would be too strongly of pane of a homogeneous atmosphere diversed the infinity by which we are impressed a vith the considerable would respect the only worth the considerable would respect the only will, and the substance of a homogeneous atmosphere diversible of the formation of the pound. In the considerable will, and the substa

WHY does the moon or sun appear larger when near the horizon? The atmosphere acts as a lear, thus magnifying the sun or moon. The atmosphere as seen from the entrace of the chosphere is a section of a vast lens whose radius is the semi-diameter of the earth, hence it is reasonable to assume a small increase in the size of objects seen through it, and a still greater increase when seen in the obliquity of the chorizon, in the same manner as an object is seen at a low angle through a long focus lens, or by turning it edgewise.

FLIGHT OF BUTTERFILES.—Some years ago one of the members of the Agasaix Association reported a vast warm of butterflies passing yorld a vast warm of butterflies passing your Calveston island, in some instances enabled your vering trees on which this insects alighted. We shall be glad to hear of any other similar observations. Meanwhile get out your stateses shall be glad to the salvolurg is stirent of the states est of the salvolurg witnessed a singular sight. From 2 to 4 o'clock in the salvolurg mineral the out your the out in the sound an immense train of butterflies passed over the city from northeast to southy in the company and must have amounted to millions. The groups seemed, as they went on in the common direction, to revolve also on in the common direction, to revolve also round the line of direction as an axis."—The trains of direction as an axis."—The

THE ROLLING CONTACT OF BODIES.—Professor Hele Shaw lately delivered a lecture at the Edyal Legituding upon "The Falling Conserved by putting to Conserved by putting to Conserved by Dadies." He commenced by putting forward the proposition that when a carriage-wheel is voiled shoug, any particular point upon the trip of the wheel always reaches and leaves the role of the wheel always reaches and leaves the ground in a perpendicular direction. In order to demonstrate this, attention was drawn to the which the contral point at the fact that on revolving a wheel from which the speck of the contral point at the extreme end of a spoke always reached the the extreme end of a spoke always reached the pround and remained there only while the spoke the truth of this such special in order to make the truth of this estenent more apparent to his audience, the lecturer had more apparent to his audience, the lecturer had more apparent to his audience, the lecturer had which near the edge, was attached a small order to make the wheel rolled along a level brinch, or that as the wheel rolled along a level which it was fixed. The diagram so obtained to the breaked upon a surface, the break point of the wheel upon the direction of the proved to be a representation of a series of proved to be a representation of a series of proved to be a representation of a series of proved to be a representation of a series of browest point in a perpendicular direction in lowest point in a fluctorion perpendicular to a transmit of the cause of the season of the same and the contral at that the contral at the presentation of the contral at the proved that in a perpendicular direction.

From these results it was deduced that in the cannel of the contral and the drawn to the contral at the this of the contral and the contral at the contral at the presentation of the cannel of the contral and the drawn of the contral and the drawn of the drawn of the contral and the drawn of the drawn of

(To be Continued.)

when we consider that this blood-onrdling and rather uncelenting declaration was the overtart allow or ordburst of a youthful professional on the threshold, no threshold, no the threshold, no doubt, of a brilliant though tragic career. Experience, age, and rigening, pertapse, of respect for the alliliant though tragic calmer voice of soience, may in time lead that the allocation, as well as for the calmer voice of soience, may in time lead that the action of soience, may in time lead that the action of soience, may in time lead that the consideration of the constant o

Had thy strong speech and impatient arm; but a stern test is time! I have lived to see That among men the tools of empire and of power. Are softened words, not blows;"

that this storm can be and impartent arm; that thy strong speech and impartent arm; that thy strong speech and impartent arm; that thy strong speech and impartent arm; That among men the tools of empire and of power when the strength of the speech and impartent and of power of the speech and impartent and of power of the speech of the s

A SIMPLE CURE FOR HHEUMATISM.—A correspondent of the Baglish Mechanic says: Let all of "ours" know the following: My wife has sufficed occasionally with acute rheumatism has sufficed occasionally with acute rheumatism in her feet, with paintul swelling, completely taking her off her feet for many days at a time. The following remedy was recommended recently and tried, and took away the agonizing pain in less than 15 minutes, and she commonded requestly in the many for the following remedy was recommended well with will be able to button her boots and walk without a stick or crutch: One quart of alumit, this makes ourde and whey. Bathe the part affected with the whoy until too cold. In the feeted with the whoy until too cold. In the makes ourde and whey, and after bath affect of the with them on as a poutice, wrap in flamely and—go to sleep (you can). Three applications should be a perfect cure, repair in aggressated cases.

Sorrel And Soare A Poisonous Confourd.

It was a very curious and almost unprecedented chain of canses, we imagine, which brought shout the death of a little boy at little boy at little about the death of a little boy at during the day a quantity of sorrel which he found near his mother's house. In the night, water which stood near his bedeate. Max day water which attood near his being held, the medical he died, and an inquest being held, the medical evidence was to the effect that the alfali of the sorigh acting upon the sorrel, had formed oxalic acting upon the sorrel, had formed oxalic sorie, and the solution of the sorie of the solution of th

THE NECK AND FERT are the most vulnerable parts in "catching cold," and Dr. Brown-Sequence and a source of the result of the series of temperation of the series of temperation of the series of temperations and places of consists in blowing upon the nest daily a stream of cold air from an elastic bag, and placing the feet in water, the temperature of which should be gradually reduced from day to day until the coldest water is used.

used as fuel. According to report, his process consists in heacing the oil and afterward adding from one to three per cent of soap. The latter dissolves in the oil, and the liquid upon cooling forms a mass having the appearance of coment and the latter showly and withproduct is hard to light, burns slowly and with product is hard to light, burns slowly and without smoke, but develops much heat and leaves out smoke, hot develops much heat and leaves and shout two per cent of a herd, black residuan.

To PRESENTE FENCE-Posts, —Charring the bottom of fence-posts, simply, has but very bottom of fence-posts, simply, has but very little influence on their preservation. Charcoal little influence on their preservation. Charcoal passes it rapidly to the uncharred wood will have been observed with coal test the posts a properties of the charcoal will then be utilized, causing the coal test to penetrate to a great depth than when placed upon the uncharred wood. The coal test also prevents the charred wood. The coal test also prevents the

OLAY FOR CENERTINO WARENTANKS, ETC.—
The seer of Aberdeen has instructed a Mr. T. Fraser of Aberdeen has instructed and go on they for prevanting leakage in reservoirs, water-franks, and so on. His plan is to puddle with dry compressed clay, which dry by is dried and ground before being applied to the bed of the reservoir, aron, or road, and is thus believed to render it more road, and is thus believed to render it more water, but being prevented to a certain extent from expending, it does not readily admit of from expanding, it does not readily admit of from expanding, it does not readily admit of inflictation.

BLACK VARNISH FOR IRONWORK.—To make a good black varnish for ironwork, take 8 pounds good black varnish for ironwork, take 8 pounds of saphaltum and fuse it in an iron leetile, then do f saphaltum and fuse in meseed oil, I pound dead these add 2 gallome of sull fume over), and boil them for about 3 hours; then add 1½ pounds of dark gum about 3 hours; then add 1½ pounds of dark gum has a mill fume over), and the consider the first when cool. After price it should be chimned with temperature to the proper consistency.

PETROLEUM JELLY OR VASELIUE Serves to clean and take away all traces of dirt from the hands after work in the shop or laboratory. For that purpose one need only rub the hands with a small amount of the jelly, which, penetraling into the pores of the skin, incorporates treshing into the pores of the skin, incorporates Wiself with the greasy matters which are there. Wash them warm water and soap, and the hands quickly become cleaned and softened.

# GOOD MEALTH,

The Cancer Discussion.

We give this week a report of another case of the came nature as many preceding ones. In this case, a period of seven years has elapsed the came nature as many preceding ones. In the absorptive treatment, and there has been up returned the cancer returned the absorptive treatment, and there has been on years. Farmham has a processor, Mrs. Farmham of Thlare Gity; age 50; no children; father and father's annt, also her cancer reached for cancer time; was a father and father's annt, also her time; was a there and father's annt, also her time; was a then deed by the cancer returned, and side, "It will close you up, makin." Sho was treated for cancer is the cancer returned, and sho said the cancer returned, and sho cancer of Thlare, Mr. But. Dr. Cook, and had been one year all at that and sho cancer of Thlare, who gave her no hope, and the cancer to the cancer of Thlare, who gave her no hope, and the cancer of the can

### "The Knife and Fire."

USEFUL INFORMATION.

Awdray Expressions, Some experiments I made about eight years ago to teat this point made about eight years ago to teat this point made about eight years ago to teat this point and door factory, where a sandgaper machine, and door factory, where a bed doop they were made of an inch. This dust was working. In a west that the thing was working. In a west that when a queezed in the bright fire a was outlet to my office, where a bright fire the brand waster would run out. I then carried was an undoubted explosion, of such a force as a blow the sample of the fire the farmer and the come of the sample of the few tests and the constant was an undoubted explosion, of such a force as a fined to holw the mies lighte out of the few tests and the constant of the few tests and the constant works of the few tests in the such as is found in flour-mills, each and door factories and other works of like neture as a explosion will take place of such violence an explosion will take place of such violence and expressing the few forther works of like neture. The few forther works of like neture the few being the few forther works of like neture and the such as is found in the such as is found in the few forther works of like neture from the four for the entire removal of all the danst from the beilding, and this in the only as to way of dealing with this guidences.

In the works are the such as the such as a beilding and this in the only as to way of dealing the such as a problem.—M. It Bulker in Scienting with this works.

Tor Etrentzo on Cottery.—Take a ground wax composed of equal parts asphaltum; hurby wax composed of equal parts asphaltum; it, neadly pitch and beeswax, melted together and theoroughly incorporated. In applying it, neadly pitch and of cotton covered with alike, nead the library of the cotton covered with alike, near the blace of cutlery so that a stick of the wax will readily melt by touching. Smear articles, and dab it evenly all over the surface, and dab it evenly all over the surface, articles, and dab it evenly all over the surface. When cold, scratch the required design or named to contact with a long of parts, named on the surface and chouch the surface and contact ways a found the surface and bring the acid into contact with all over the surface and the said into contact with all one. Dit is lines, not a contact with all one and the interportine, with a low drops of linesed oil and the required design, with a border, as as to stip the vequired design, with a border, as as to stop off stown with a design. Stamp the goods, and with some of the variant the goods, with turpentine and a brush about of the carried down with the turpentine and a brush about of the carried and with a sund with some of the variant shop off stometh as the winding parts; or surround the design with a small rim of becawax, and apply the acid as above.

hove.

WHAT IS PORTLAND CERIENT ?—Portland cement is an artificial product, chemically proper selection of the may be tied entering into its composition. These, the proper selection of the marious definition of the proper selection of the marious definition of the marious definition of the marious definition of the finest powder by dividing the definition of pasts reduced as in this country, are, in every case, reduced as in this country, are, in every case, reduced grinding, and this powder moistened merely in the finest powder by either wet or dry bring molecule in the dry process, or in the form of pasts in the browners are prought, either by drying in large tanks or by being molded into orderes, eggs or other forms, a new stone, in british large tanks or by being molded into contects and are in perfect bemical prought, and element, in close contects and are in perfect bemical proportion. It is artificially, when properly proportioned chement and aluminate of lime. This ground climet, at high heart in close chime. This ground climeted in the practically, when properly proportioned chements and aluminate of lime. This ground climeter is and aluminate of lime. This ground climate of lime the Portland cement of commerces, a fixed unitary of the composition of the definition of the control of the strengths and firmness, and depends upon the controllable elements of skillful manufacture for its character and uniformity.

Sugar, and the state of the manufacturers, is frequently sweetened with molasses, honey, is frequently sweetened with molasses, honey, etc., is not doubted, but it will be a surprise to most people to learn that a considerable percentage of sugar is a natural constituent of tobaccoo. Yet such has been demonstrated to be the fact by Prof. Atthefal, F. E. S. Eight samples were obtained from planters from 5.7 to 9.60 parts of tobaccoo sugar, and from 5.78 to 12.80 parts of tobaccoo sugar, and ditions, or without sufficient heat, the conscious of sugar is often but a mere trace, while to of sugar is often but a mere trace, while for if the constant of the constant o

To CLEAN GLIT Goods, as it is no easy matter doops.—Stationers always have loss in gilt goods, as it is no easy matter expected from bright and clean. The following, is a good recipied, if of meetal, may be cleaned by eather or ceipe. Gilt articles, if of meetal, may be cleaned by moistened with a solution of an oence of brush moistened with a solution of an oence of brush moistened with a solution of an oence of clean water, and drying with a solt linear rag. Their luster may be improved in oestain cases gentle friction with a soft rag. Gilt frames of mirrors, pictures, etc., should never be touched with anything but clean water, gently applied with a soft sponge or brush.

SOLIDIFICATION OF PETROLEUM,—Dr. Kauff. mann is at present making some experiments for the Eussian Covernment, with the view of finding a process of soliditying the petroleums

The Coming Fairs of 1887,

Bay Dist. Assoc., S. F., Aug. 6 to 13. S. Clara Walley Agric. Soc., San Jose, Aug. 15 to 20. Sonoma Co. Agric. Park Assoc., Santa Icosa, Aug. 10 23.

as (o 27)
Fourth Dist.—Sonoms and Marin—Petaluma,
Nug, 29 to Sept. 3,
Eighth Dist.—Ei Dorado—Placerville, Aug. 30 to
Sept. 2.

Sept. a.

Thirtecenth Dist.—Sac, Yolo, Yuba and Sutter—
Thirtecenth Dist.—Sac, Yolo, Yuba and Sutter—
Maryaville, Aug, 30 to Sept. a.

Mechanic's Institute, San Francisco, Sept. z to

Mechanic's Institute, Jam Transcorrent Coct.

Oct. 8

—Oakland, Sept. 5 to 10.

Third Dist.—Butte, Colusza and Tehama—Chico,
Sept. 6 to 10.

Cal, State, Secramento, Sept. 12 to 24.

Volalley, Sept. 6 to 10.

L. A. Co. Pomological—Los Angeles, Sept. 12 to 24.

L. A. Co. Pomological—Los Angeles, Sept. 12 to 24.

L. A. Co. Pomological—Los Angeles, Sept. 12 to 24.

L. Co. Pomological—Los Angeles, Sept. 12 to 24.

L. A. Co. Pomological—Los Angeles, Sept. 12 (1) 17.

Ninth Dist.—Humboldt and Del Norte—Rohner-Reads State, Reno, Sept. 21 to Oct. 1.

Second Dist.—San Josquin, Sian., Merced and Second Dist.—San Josquin, Sian., Merced and Tuol,—Stockton, Sept. 26 to Oct. 1.

Tuol,—Stockton, Sept. 26 to Oct. 2.

Pinth Dist.—S. Clara and S. Mateo—San Jose, Mincteenth Dist.—S. Clara and S. Mateo—San Jose, Mincteenth Dist., S. Barbara, Sept. 27 to 30.

Tenth Dist.—Sishtyon, Trinity and Shasta—Yreka, Sept. 26 to Oct. 1.

Eleventh Dist.—Sishtyon, Trinity and Shasta—Yreka, Sixth Inst.—L. A., S. Bernardino and Ventura—Liventh Dist.—Humas, Lagsen, Modoc and Seventh Dist.—Humas, 1. Lagsen, Modoc and Seventh Dist.—Monterey and S. Benito—Salinas, Oct. 4 to 8.

Fillteenth Dist.—Tulare and Kern—Visalin, Oct. 10 to 15.

A Curious Tree.

whose roots straddle a prostrate redwood 100 feet from its upturned roots, at which point the loady of the redwood measures 6 feet in diameter. The redwood was evidently blown down by the wind. The roots of the fir tree come from the ground on both sides of the redwood coming together on top of the tree as it lay on the roots on either side—and the four the form the body of the tree, the tree, the from the tog of the log, upon which it secure from the top of the log, upon which it secure from the top of the log, upon which it secure from the top of the log, upon which it secure. By held by lateral roots running into the ground, This redwood tree, when standing, judging by the proportions of the part now remaining, which by actual measurement is 150 feet blownd where the roots of the fix strading the end of the redwood trunk extending 50 feet beyond where the roots of the fix strading of leathers. In the Elk River valley, a few miles out of Eureka, there is a natural curiosity, which the Standard describes as follows: It is a fir tree whose roots straddle a prostrate redwood 100

die it.

We cook pains to measure the main roots of die it.

We cook pains to measure the main roots of the fire, where they come up and form the body of the fire, and found them to be from 16 to 20 inches sores the top and over 2 feet through.

Lu building a logging road some 12 years since, a section of the redwood was cut ont to allow the passage of teams, and the wood was found to be in a perfect state of preservation, and it come student of the size of this date. Can some student of natural history tell us how many years it took for the fir tree to acquire the size of the fire took for the fir tree to acquire the size of the fire passage to the size of the fire took for the first the size of the fire took for the first the coquire the size of the first paint to the ground?

The Mining and Scientific Press has stated out on a new volume. We are happy to learn of the prosperity of the Press and hope it may continue, for it is deserving of the most liberal support. Byery miner should have the Mining Bupport, Byery is not only the advocate of his industry, but turnishes him with the best information on subjects of interests to him.—

Information on subjects of interests to him.—

Calarceras Chronicle.

On for Boors and Snoes.—If vegetable oil most scool sor and casto castor oil—is used for softening shoes at input, there will be no trouble in putting a good polish on them the next morning. It is the saimal oils that trouble the user in polishing. All oils should be kept away from the ing. All oils should be kept away from the kewed work of shoes or boots, and also from all kinds of the cast is a said also trouber fabrics.

make a hot solution of three pounds of common washing sods dissolved in a gaint brush. Marble which has become discolored from the weather, or the presence of gases in the atmosveather, or the presence of gases in the atmosphere, may be cleansed in the same way. To CLEAN RUSTY GRANITE use strong lye, or

paires.

Balthmorr.—The crosscui's on the goo level are showing a considerable amount of good milling ore.

The north crosscut will be pushed through to the west wall of the vehi. The downsal has never yet west wall of the vehi. The downsal has never yet west wall of the vehi. The downsal amount of milling ore is being extracted on the 400 level.

HALE AND MORCROSS.—The new working station milling ore is being extracted on the 400 level.

ALLE AND MORCROSS.—The new working station at the 400 level of the shalt is completed and a drift at the 400 level of the shalt is completed and a drift at the 400 level of the shalt is completed and a drift at the 400 level the north drift as feet. Both drifts at each, and and a drift in an quartz, from which some fair assays are obtained.

Soonwhow.—The east drift on the 300 level base at the 4sec. The miners have been employed in at the 4sec. The miners have been employed in putting in air pipe from the station to the face of the drift and in repairing the shalt above the 300 level has been temporarily discontinued on secount of foul air pipe from the station to the face of level drift and in repairing the shalt above the 300 level.

the incline.

Ckowyn Polnx,—Are taking out daily 130 tons of ore, which is being shipped to the mills on the Carann reduction. The usual prospecting work is being done. On the 400 level has been found a promising deposit of ore that appears to widen and promising deposit of ore that appears to widen and it about 800 feet of virgin ground. There is below to down.—The mill is steadily running, and there is a good showing of smalgam on the outside plates. All parts of the mine are looking well. Supt. Curtis has added a grinding and amalgamating apparatus has added a grinding and amalgamating apparatus pelow the copper plates. This is worked by the rocker motion of the crushers, and is intended to rocker motion of the crushers, and is intended to grind such rusty gold as is not caught on the grind such rusty gold as is not caught on the Batter.

CHOLLAR,—The work of timbering up the drift running between the old Chollar and the Sharon shaft is about completed. The winze 90 feet west of the Sharon shaft, alongside the old Blue Wing stope, continues in ore of good quality. Good prograces is making in the winze going down tom the 350 to the 450 level. Have got the old phast eleaned out to the dollers. It is 930 feet deep. The station is to the bottom. It is 930 feet deep. The station is bottly caved; much debuts has also tumbled down the incline.

MEVADA.

Would be of great benefit to that section,

Tuoliumne.

Good Russ.—Tuoliumne Independent, July 16:

The App quarts mine, at Jamesnown, though worked
with a small force and modest way, with a small force and modest way, with a scalal force and modest way, with a scalal force and section of 18:85 from 98 tons as one of the most valuable in the county. Recently, stand to 18:85 from 98 tons of 10:65, an average yield of \$88.85 for the ton. The ore is stoped through the great of \$20.05 feet, and the stope from 54 tons, an of 18:45 oper ton. The ore is stoped from 18 average of \$20.05 feet, and the swert her great or a feet in the great or one to the count and of the mine—length of chute of or in the great or and the with his mine, as the great of the count of the mine—length of chute or in the great or and the swert of the great or and the swert of the count of the mine—length of chute or in the great or and the swert of the swert o

THE LOWER TRINITY TOWNE,—Mr. Wm. Fowlet, superimendent of the company organised to turnet, superimendent of the company organised to turnnel the point opposite French Creek, was in town
the week and reports the work on the tunnel as progressing very favorably. The tunnel is 16 feet by 8
gressing very favorably. The tunnel is 16 feet by 8
gressing very favorably. The tunnel is 16 feet, and
injent shift. They are now in about 90 feet, and
will increase their working force shortly, and expect
the tunnel will be completed by the rst of January,
the project and confidently predicts that the entierprise will be a paying investment in the course of a
year. A permanent and paying progetty there
would be of great benefit to that section.

proper,

A VEW FIND.—Mr. Shepardson has discovers
fried quartz prospect near the old Drinkwater of
gings in Hay Fork. It at present looks more far
sole than any that has yet been found, and we h
it will develop into a splendid mine. Some of
rock assays as high as \$600 to the ton.

The conver Transfer of the ton.

it enters a hopper and is run through a self-feeding Vicholas crusher, which reduces the ore to about th size of kernels of wheat before it enters the mil proper

MINING SUMMARY.

SOUTH SPRING HILL.—Amador Ledger, July 16: The mill is trunning no low-grade ore, coming from the goo, 600 and 700 levels. There is a vast quantifor goo, 600 and 700 levels. There is a vast quantifor it is to the main so long as it will pay working expenses. One of the main points to be working expenses. One of the main points to be open; to dispose of the waste material in a manner that will not choke up againg rook and entail exist that will not choke up gaying rook and entail exist in mail on low-grade or when at the same intense over. It is often poly, therefore, to run a imill on low-grade or when at the same inner there is penage of the waste material with a prosperous condition, although the output, for the months ago.

McKENZIE.—Carpenters will commence the erec-.TobamA CALIFORNIA.

MOKENZIE.—Carpenters will commence the erection of another large Huntington roller quarta-mill on of another large Huntington roller quarta-mill on the secured he or the received the roll of secured he had being cateful for go,oo feet of lumber, which is now being hauled on the ground. Some of the machinety is fast as it is needed. The Huntington mill now at fast as it is needed. The Huntington mill now at seast it is needed. The Huntington mill now at work carabase from go to 40 tons per day, and gives excellent satisfaction on the character of ore met statisfaction on the character of ore met peed on made, but we are unable to give the yield per peed on mit the treatiful in progress of the met of the creatiful in progress of the met of the creatiful in progress of the meter and the creatiful in progress of the meter of the meter of the creatiful in progress of the meter of the meter of the creatiful in progress of the meter of the meter of the meter of the meter of the creatiful in progress of the meter of the creatiful in progress of the meter of the

NOTES.—Butte Miner, July 15: The rumor of a hourdown at the Amy and Silvetramith is stated by a hourdown at the Amy and Silvetramith is stated by and additional states of the Soo, and made to crosscut the north ledge on the 500, and the company anticipated starge body of water. The the company anticipated starge body of water. The degle being now out, work will be resumed on Thurst the looks of the recently uncovered vein. The ebatt in the chocks of the recently uncovered vein. The shall house the started by abstracts, and crosscut. In a expected, he struck by abstracts which will, we struck by abstracts which wills. Work on the Boiler was raised before the smeller. The empleased of the Colorado preded, after sibring enough to on the colorado pended, after sibring shout ut feet, and orescuting to preded, after sibring shout at feet, and orescuting to preded, after sibring shout at feet, and orescuting to most in the action of the Patrot.

Soolous so feet for the edge they were endeavoring to nor the north and south vein has been encountered on the north and south vein has been encountered on the south of the Patrot.

ASBESTOS.—Chico Record, July 16: It is reported that a big ledge of asbestos has been discovered in Spring Valley guloh, Cherokee. If found to exist in very considerable quantity at Cherokee, the find is a valuable one.

ening.

been made, but we are unable to give the yield per non-the made, but we are unable to give the yield per too. The owners, however, are said to be much pleased with the result in the mill foremay, has a face of a dealer beautiful to the mild in progress a please of a condition of the mild of the most bad a next residence built below the mild incent the bad a next residence built below the mild incent the bad a next residence built below the mild incent the bad a next residence built below the mild incent the bad a next residence beautiful to the mild incent the bad a next residence but below the mild. For the bad a next residence but the most desirable place to the second of the mild to the bad a next residence of secretaining the most desirable place to the second of the mild to the mild in the feeling out its difficulties. A demand was transed until all the bad and the most desirable place to the compount of the mine the feeling out its difficulties. A demand was transed until all the series of the compount of the mine the compount of the mine the feeling out its difficulties. A demand was the days, and strain the demand of the mine the feeling out its difficulties. A demand was the days, the set of mild of the bad of the mine the demand of the compount of the compount of the compount of the second of the differences.

The sate satisfied. It is expected until all the waster of the surredered to the compount of the compount of the compount of the compount of the west ledge, some 250 etc. The dump at the mount of the stand of the difference well as a couple of the surredered and them to be seen gives towen that the demand to the west ledge, some 250 etc. The dump at the function of the west ledge, and simultaneously a flow of waster about of the west ledge, and simultaneously a low of water about of the waster of the waster about of the waster as the wast

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

bedtock. The season's run has been flattering.

Degrifted or the bill, to enable the company to pipe to the bedtock. The season's run has been flattering, and downs, the Calaverse mine at Indian creek has an downs, the Calaverse mine at Indian creek has a lest fallen into hands in the Jas. McKimty took character. On the sax of June, Jas. McKimty took paraceter, on the sax of June, Jas. McKimty took paraceter, on the sax of June, Jas. McKimty took paraceter, on the sax of June, Jas. McKimty took paraceter, on the sax of June, Jas. McKimty took paraceter, on the end of the manner of the fatter in the work of the fatter in the levels in the latter in the work of the fatter in the fatter in the work of putting of the one fatter while. The machinery recently erecting years much promise. The machinery recently erecting the pump keeps the water from the shaft. Levels of the same idea, July 15: The framework of the new mills at the Eathart mine, near Smith's of the new mill at the Eathart mine, near Smith's of the new mill at the Eathart mine, near Smith's of the new mill at the Eathart mine, nearly smith's of the new mill at the work of putting it into on the salety at the new chlorination work is going come being with at the new chlorination works is work is going one brighty at the new chlorination works to one brighty at the new chlorination works is soing means business.

The and the same in the Eathart manner in this in the same in the same integer.

The mill work is going the same in the same in

ATMINE AT MURPHYS.—Calsveras Prospect, July 16: The going as to consequence over teen. This is said, will sent reason is the contemplated from the variant pool of the sent reason is the contemplated from the sent reason from the sent reason is the contemplated from the sent reason from the sent

TLIDICA:

OUARTZ.—Yreks Union, July 15: Hegler Bros. & Aldrich commenced their second turn on quartz Matta Monday. The richness of their ledge has attacted a number of prospectors to Humbug, where tracted a number of prospectors to Humbug, where other good-paying lodes undoubleedly exist.

Sisklyou.

MILL BUILD A QUARTY-MILL.—Signta Tyribune, bully 16. A co-stant mile.

MILL BUILD A QUARTY-MILL.—Signta Tyribune, July 16. A co-stamp mill is to be erected at the Porest King quartz mine. One of the owners went below a few days ago to purchase the necessary mechines of the owners. George Black of this place is to have the full charge of the work. It is proposed to have the full charge of the work. It is proposed to have the mile has been put in shape. War, Lesiman went up with a load of upplies from A. W. Conwelly's establishment several mill in running order at as early a date as possible. A wagon-road leading to the mine has been put in shape. War, Lesimana went up with a load of upplies from A. W. Conwelly's establishment several days ago and encountered no difficulty in making the trip. The mine by wagon-road from Jassent's the trip. The mine by wagon-road toon for up yorable and there is a goodly amount of ore in spent to be at variance with the eternal futness of things, the principal mine of this place is named the Primare, Johe with the mine until recently has been under water, too pose a variance with the eternal futness of things, the mine until recently has been under water, and print of until relating to the district. The mine until recently has been under water, the principal mine of this place from the form of the mine and handsomely; the management have reasonable hopes tending, the management have reasonable hopes ever the mine paid handsomely; the management have reasonable hopes ever the mine paid handsomely; the this their reward is in the near future. A few prostering at the form of the present of the district.

Stablishment of the seasonable hopes district.

Stablishment of the seasonable hopes district. Heyler Bross. July 15: Heyler Bross.

The Providence of the profession of the mile forming forms.

The Providence—Greenville Bulletin, July 13: This property is located above goons of adding the base for the wood of the more or less of the form of

Figures.

PIBOOF.

PIBOOF.

PIBOOF.

QUARTZ.—COr. Placer Herald, July x6. Our placets the properties of a street of a street

purchases a new mill. The mine is looking better than ever before.

\*\*Cett.\*\*

\*\*Cont.\*\*

\*\*Considerable amount of it costing out in fact state seek after supplies. The fact state seek after supplies. The property of its control of its

towns, the property of the mine in the eastern part of this course of construction in the eastern part of this cown. It is now evident that the backent part of the property o

39,000 pounds, The first shipment of quicksilver from the Bradiord mine since the new furnace there was constructed was made the first of the present month, and amounted to 7600 pounds,

was constructed was made the first of the present month, and month and month and month, and month, and month, and amounted to yoo pounds.

Navada.

Miller is now fairly started in on the new tailings veal, and old in the new starm stamps is ready, and everything looks in working order. The company had everything looks in working order. The company had everything looks in working order. The now know the different systems of the attent and just what hey are divided by Geo. Wh. Clinic Schote.—Inter-Mountain, July 14; they are doing. The middle of September will see they do only the had been seen to the factor of the Magnet group of mines, lately purchased in the material ordered arrived on Sunday. A force on is \$50,000. Their elevation of the Magnet group of mines, lately purches and cools. Work will be begun on the winter and tools. Work will be begun on the winter and tools. Work will be begun on the winter and tools. Work will be begun on the winter and tools. Work will be begun on the winter and tools. Work will be begun on the more, three starts are moleted out of the Chinaman lead, and it is considered quite structured of the Magnitude claim at once, three subtracting as any of the others; it not more so.

The general impression in that part of the country of the forth of the contraction of the country of the others; it not more so.

The general impression in that part of the country in colphped of it as ample from a boulder of about its that the property will prove way good. Mr. Gillis that the property will prove way good. Mr. Gillis that the property will be supple refuned an assay of soo. The claims. The sample refune teumer and a seasy of soo. The leads on all the claims are partailed and pitch about the north.

DEVELORMENT WORK.—Silver ('ity Entreprise, July 15: It is denited that the Volcano has been bonded. A earload of ore was shipped from Gamp bonded. A earload of ore was shipped from Gamp Vellines like week. The Owens shipment of ore to Socotro gave very satisfactory returns. The Pacification of the Conservation of the Conservation of the Maright has bought an interest in a mine near the Atlantic at Pinos Altos. Concept in a mine near the Atlantic at Pinos Altos. Concept in a mine near the Atlantic at Pinos Altos. Concept in a mine near the Atlantic at Pinos Altos. Concept from their Mailone mines next week. T. C. Carey brought in a 49-pound brick from Telegraph, or the Mailone mines next week. T. C. Carey brought in a 49-pound brick from Telegraph. Tuesday. It was 997 fine. The camp is doing well. Bob McCone, owner of the Homestead at Carey brought in a 49-pound brick from Telegraph, in a 49-pound brick from Telegraph. Some of the high grade wenged \$500 per us mine will average \$500 for was thrown over the dump. It is possible that it no wonder that the time in it is no wonder that the time in the dump of the Solid Silver mine and not pay when such its owned which was cached there.

Some of the high feat we trich plant of solid silver the dump.

### OREGON.

PLACER AND QUARTZ.—Jacksonville Times, July 15. A site amount of prospecting is being done in Jackson and Josephine counties. John Goff of Jerave Creek did well in his mines this season. He cleaned up nearly scooo. Baker & Marsh, who have been minng in Uniontown precinct, will soon go to been minng in Uniontown precinct, will soon go to been minng in Uniontown precinct, will soon go to the marstra. Kilppel & Lydle are busily engaged in getting their straties in shape at the Rotein close by a marstra. Kilppel & Lydle are busily engaged in getting their straties in shape at the Rotein close by McDonnel, who own extensive minng property on those to commence owner week eiter next. Logg & McDonnel, who own extensive minng property on of more reservoirs. They made a good run last season, A new body of quarts has been found in the with Jesus and the work of the strategies of they mere specification of the mines of more reservoirs. They made a good run last season, has been for so long a time past last season last closed by Simmons, they well a mines in Jesephine county will be ywere, worked during the mines are not satisfied with the result and have given up ownership.

Ownership They was a proper of the result and have given up well a mines, in play its:

Impending SALE,—Bedtock Democrat. July 12:

The Section of Singing of mines, in play 18: They set out the singing of stone of the singing of the stone of the singing of stone of the singing of the stone of the singing of stone of stone of stone of stone of the singing of stone of such singing of stone of st

were not satisfied with the result and have given up ownership.

IMPENDING SALE, —Bedrock Democract, July 12: The Simmons group of mines, in Pine Creek district, is on the eve of sale to Denver capitalists for a trick, is on the eve of sale to Denver capitalists for a bigge consideration. The parties negotiating for the same of the capitalists of the parties of the same of the capitalists of the same of the district, in fact, was located two years before the excitement right with a same of the district, in fact, was located two years before the excitement right with the district, in fact, was located two years before the excitement in fact, and the district of the same of the control of the fact of the county mines. Those who have specified by and the near the eigenstance of the county mines are mineral wealth, and are free to express themselves protected of this county will create the fact of the county will create the form of the sasstrion.

The Murrican and are free to express themselves a mining excitement the equal of which has not created by until the reservance on this coast. This seems a little interest wealth, and are free to express themselves or this count of the main ledge taken out. The owners have received a call yealth of the sasstrion in the case of the control on the sasstrion of the main ledge taken out. The owners have received a call yealth of the control of the main ledge taken out. The owners have recently found a string-the case, showing the in free gold. Development work is progressing well and the indications offer every sign of a good mine.

URAPI.

### .HATU

And the row of the rest and mason work in the stone mere operations of the stone mere operations and the row of the stone mere operations. The meson as the stone mere operations and the row of the stone mere operations and the stone mere operations at the row and its of the row of the

diverged so widely that no sale was effected. The owners of the Americus claim are jubiliant over the discovery of a fine pay streak in that mine, which, which is said to be six inches in width, and several assays and to be several assays of the ton. The Queen of the ton, The Queen of the Mountains ago counces to the ton. The Queen of the Mountains claim, on Boyle amountain, has been asid to Louisville, Ky., parties. The second bar of the second bar of the second bar of the second bar of the membranes to destruct by Kertchum parties. The second bar of the necessor shipped by the Vienna Co. arrived on Wedserson shipped by the Vienna Co. arrived on Wednesday, and was shipped by express to destination. Its salue was stroom. Five bars of builton from the necessor shipped on more, County, were brought to town on Thursday and sent to Mew York City by town on Thursday and sent to Mew York City by town on Thursday and sent to Mew York City by town on Thursday and sent to Mew York City by the Company of the County were supported by the County were borned to the County which with the County with the County which with the County with the County

GOLDEN KING.—Court d'Alene Merord, July 12: We see the Court d'Alene Merord, July 12: Summed on the Golden King group. The winzer of the work is soon to be resumed on the Golden King group. The winzer of the limbility informated that work is gestining five view or detect extra desirable for the Excelsion of the Excelsion and considered even bettler than the Hunter, which sow considered even bettler than the Hunter, which sold for \$90,000. R. H. Kemp, of the Excelsion sold for \$90,000. R. H. Kemp, of the Excelsion sold for \$90,000. R. H. Kemp, of the Excelsion sold for \$90,000. R. H. Kemp to the concentrator is being having be nade to the forday. This one weights 100 counces, and is worth have the concentrator is being having the made to for the Buckey by the prevented by the back of the and of the Buckey Boy mine, reports that on Sunday and the strucks avein on the Buckeye ground which he thinks is an extension of the Juckeye boy mine, reports that on Sunday and the strucks avein on the Buckeye ground which he thinks is an extension of the Juckeye Boy mine, reports that on Sunday and the strucks avein on the Buckeye ground which he thinks is an extension of the Juckey Boy mine, reports that on Sunday and the struck avein on the Buckeye ground which he thinks is an extension of the Juckeye Boy mine, reports that on Sunday Gold and base to days. That is a pretty good showing the past to days. That is a pretty good showing constition to bars at the Excelsior seasy office during part of the placer product is shipped out in the crude mow going on and the feet that much the greater that the crude state.

OLD BALDY Mortes.—Dr. E. O. Smith is preparting the crude on the Buckeye ground which in the crude of the placer product on show the greater of the placer product is shipped out in the crude state.

ites. There are indications of the close proximity of a vein.

COMMONWEALTH.—Fair progress has been made to a vein.

COMMONWEALTH.—Fair progress has been made in sinking the main shaft. The rock is breaking from the south end line on the goo-loot level has been from the south end line on the goo-loot level has been made on the form the south end line on the gone stated the fair from one to three such ends to the gangway. The formation prenatived the past week looks very encouraging, as several seams, or, were cut. Evidently there is a vein abpeat week looks very encouraging, as several seams, or, we control the gangway. The formation in the fair was present to the gangway. The bear of control to the gangway, and the pushed forward as rapidly as possible, Expect all the mannate on the formation of the mannate on the formation of the mannate on the formation of the seast vein, good progressing the or the globe material work as a spile showing some mineral, and progressing the source of the seast vein, good progress in the mannate in the fair which he lie late vein was bessed through wings in width a bean was beased through a posure the stall the mannate of the stall with a stall we went better than where the crosscut run into it. In the stall worth Belle late vein was beased through a pour he too-loot level. It was several letter han width and carried considerable high original worth and carried considerable high configuration of the prosents of the stall width and carried considerable high shall worth an original worth as several lett in width and carried considerable high considerable high.

In the same was crossed by the northwest original worth a day at this point is assured. The ore is high grade, and the prostring south or or or or is high grade, and the prostring south or a cross-original south as the prostring or at letter the supplemental beautiful to the stall supplementation or the south at the prostring or a singe body at this point is assured.

considering the comparaturety stems among the greater on which the placet product is shipped out in the crude state of the placet product is shipped out in the crude state.

OLD BALDY MOTES.—Dr. E. O. Smith is preparately exact of the placet module for the state.

OLD BALDY MOTES.—The D. O. Smith is preparated by the conversions on the Margaret lode, Two me can be working to the backer is now in 60 feet. J. M. Robmune on the Baker is now in 60 feet. J. M. Robbert of the working be down down the mountain. Work worked by the owners, who are all practical mines ago of trail extending seven miles good-looking feed lower down the mountain. Work worked by the owners, who are all practical mines above Doctorville. A load of supplies was taken up be good trail extending seven miles above Doctorville. A load of supplies was taken up to the Housing Margaret of West unnet.

Eagle have made a good trail extending seven miles above Doctorville. A load of supplies was taken up to the hotself of the machinety for the hotself of the Dickenstrated of the worker for the Dickenstrate of the worker for the Dickenstrate of the worker of the Dickenstrate work in the passed through Calallic on Salurday, for a force of men who will run a roo-loot series and worker work will be an ore care informed or know, its the first Dickenstrate of the worker of the Dickenstrate will be places of the worker of the Dickenstrate will be places of the worker of the worker of the more of the mines of Custer county that have so certain class of the canada and dependent of the worker of the mines of Ouster County that have so day of the supple of the mines of Custer county that have so far he more ally med the work when the owners of the mines of the same of the county and on the canada and good ore has been discovered on the load on the load of the canada and work which will be the work of the canada and work will be a wear of the same of the same of the canada and south as a series of the same of the sam THE MINES.—Prescott Courser, July III: The Peck mill was running when the stage left, a couple of days ago. There are upward of goo tons of high-grade ore in sight in the Middleton mine, his bug district. J. M. Rodenburg, who has a force of men working a mine near Diamond Joe camp, is sattered, J. M. Rodenburg, who has a force of men though a certain for mine district. It will be computed, and in conglass cray's fedge of the campling from the Black Warrior, arrived at the sampling from the Black Warrior, arrived at the sampling from the Black Warrior, arrived at the campling of the work has been a set of the course is confirmed. Douglas Cray's ledge, near Walmu Grove, News will should be seen agent a confirmed and prome is confirmed to an published by the Courtor to the effect that work on the road and matters will move right along. Coppeting the property of the confirmed and prome to the confirmed

BAYHORSE.—Sam'l Tennel took a trip over to BAYHORSE.—Sam'l Tennel took a trip over to Bayhorse and returned Friday. He says the Kamsborn Co. has got men employed around its worken born Co. has got men employed around its worken trains the smeller, grading for the new concernistance building, bauling ore, etc., as thick as black, brids. Lots of work is being done, and everything is rushing.

ONE-HAR GOLD.—Pete Johnson struck a three aim de gold ore in his claim on Custer mounting with a supply of the prought a cantull and bis pockers full down to Custer, which were seen by our informant, and to Custer, which were seen by our informant, and to Custer, which were seen by our informant, and to Custer, which were seen by our informant, and the done in his way the down to Custer, which were seen by our informant.

VETCHUM.—Keystons, July 9: Mt. T. Sprawls of Bellevue is prospecting the fulls above the mouth of Pellevue is prospecting the fulls above the mouth year the found stvorable indications, and a number year the found stvorable indications, and a number of seasys made of the rock found showed well in gold and silver. J. C. Petker, now in Kerlenhun, who ownse a gold claim in Elle City district, sent 400 ownse a gold claim in Elle City district, sent 400 ownse as gold claim in Elle City district, sent 400 ownse as gold claim in Elle City district, sent 400 ownse and one ounce of platinum. Haggin & Tevis sent an expert to look at the property, and an offer sent an expert to look at the property, and an offer was made to purchase the same. The views of the owner and expert regarding the value of the claim. The Verbe Rotted Verde ores carry gold and per 19 low, but as a Uplied Verde ores carry gold and shipped with profit.

A low days ago, when a gentleman at the East of the West ago, when a gentleman at the East assert mining and emeting at Jerome, in the Black start mining and emelting at Jerome, in the Black Hills, five or six miles west of Verde river, the fact mining and emelting up again of United Verde mines and ameliter will be of great benefit to us all. The start will be greedily followed by the working of start will be greedily followed by the working of start will be greedily followed by the working of Black Hill region, between the Squaw Peak and its morthern point. Successful operations in the mining irrigating direbes will be unast, the crokerister, all. More morthern point. Successful operations in the mining irrigating direbes will be out a narrow gauge to Verde and Bullock built, this move to work United Verde and content of the count of the content of COLORADO.

posted claim it will surely net \$500 to the ton. There are many other valuable mines in the district, notably the Central Montaula King and North Star series.

There should be a mill erected out there or here in town, to reduce the ore of the mines.

Proche District.

SATISPACTORY.—Proche Kiswal, July 16: Upon the whole, we consider the minely prospects of this first was exacted the minely prospects of this home. We do not a by the careful inquiry and personal observation.

BRILE ISLE.—Vimes Neuron, July 16: Work as suspended, pending the trepsire on the that was suspended, pending the trepsire on the Narwice. We can be the contain the properties of this interpolation.

BRILE ISLE.—Vimes Neuron, July 15: Nork Warsjo shaft, has Just been resumed.

MANALO.—Work of reimbering yo feet of the shaft has just been completed, and work resumed at all points to-day.

GRAND PRIZE.—The west 300 crosscut has been advanced so feet during the past week, the last few their bowing ledge matter.

DIANA.—East urescue from when you crosscut has been blanks.—East orescue from week, the Isst few SIAMA.—East orescue from the resumed at the last few the start far was supposent the past week, the last few start far was supposent the past week, the last few BIAMA.—East orescue from the resource of the start far blanks and the process of the start far was supposent from the resource of cool level of 150 miles of

the search points. Good progress is making in the west work of repaining damages at the Bonners shaft, wow to depaining damages at the Bonners shaft, we have not be bottom of winze Mo. The repairing the joint from the bottom of winze Mo. The repairing the joint of winze Mo. The repairing the joint of white search of this sevel.

KHICKERBOCKER,—Repair work to the machinery a should be commenced on the return of levels will probably be commerced on the return of levels will probably be commerced on the return of MORTH OCCIDENTAL—Work will be commenced transport of the Cocidental as about on the commerced of the Cocidental as ALTA.—The grading for the fundations of the formation has been made.

MUSTICE.—The work of driving the carpenters are treat points, and good streaks of ore are being found, and prospecting is actively continued.

JUSTICE.—They now have on the damp 800 tons one with a full shift of aniners.

JUSTICE.—They now have on the damp 800 tons one with a full shift of aniners.

BENTOW.—Have darked through the maine west one with a full shift of aniners.

DEST.—Sinking has been received at conce with a full shift of aniners.

DEST.—Sinking has been received at one of ore, and prospecting is actively continued.

DEST.—Sinking has been received the wince, and no ore is at present being extracted.

LADY WASHINGTON.—On the 735 level the north drift is in quartz, yielding low assays.

DIANA,—Best crossour from the zgo-foot level of S. B. Lele has been extended a total distance of So etc. There are indications of the close proximity of wein.

ARIZONA.

HAVWOOD,—The Thompson mill is the only one to present engaged in working the ore, but the mangeneral engaged in working the ore or two mills actional. The mine is looking well in every part.
GOULD AND CURRY.—Work has been resumed the coan and proper in progress at the coan and proper in progress at the cast points. Good progress is making in the work of the painting in the CURRY.—Work of the coan and shalf.

STATES THE COAN THE C

have strained a depth of 1g feet. There is about to one of or on the dumps.

The Evening Stark, owned by Shamon and Lapanta. The ore the boys shipped to Reno some time with the Lapanta. The ore the boys shipped to Reno some time sgo netted them more than they expected. While they estimated the start set of the total the surplies of more extensively prosecute the work. While they estimated it would be surplied to more extensively prosecute the work. While they estimated by Knapp, Laws and other distinct. It is owned by Knapp, Laws and other who have leased it to Herb, Hartson and Myl. Liber. The leases have sub-let a portion of the claim. The leases have sub-let a portion of the claim. The lease of the claim in the good of the claim in the good of the claim in the sub-let work. They intend the sub-let is some of the claim in the good of the sub-let is sub-let in the sub-let in sub-let in the sub

Central, and but a short distance east of the Lapanta road. They have dug holes along the course of the very robe and are now sinking an incline on the ledge and have attained a depth of 15 feet. There is about to tons of ore on the dumps,

THE EVENING STAR, owned by Shannon and

The GOLD BAR is in a very good locality to be called as it is. It bears on the Pamlico and is owned by D. Tobino, who bas done some work on it, and one of the best claims on the hill. Locations are numerous in that immediate vicinity, owing perhaps to the immense richness of the ordinity perhaps section.

the in the past of the past level the north the past level the past parts, yielding low assayes.

Gold.—Esmeralda Wew, July 16. No sooner had the Lapanta shut down than other mines of past defer Lapanta shut down than other mines of past section is evincing greater prospects started up. Every one past line the level provision of this month—it may extend the later portion of the mouth—it may extend the later portion of the later portion of the later perspects are stoked; levely conce out there have been seen to be reduced; every the later past later provided in sacking on pay atreases.

The HALE Moon BAY is also being worked; but had seeked and the boys are extracting rich ore from the Bay tunne; levely plenty more in sight.

SAN JUAN adjoins the Half Moon Bay and plenty more in sight.

Central mines on the south; the ledge has not been weeks work, it is low grade, but was easily extra from your extended. Tom Daky has made a loose for two from around the grass roots.

The Cherch and Daky has made a loosein of a franterion of the Cold Bay on the south is south in the south of a sand though of has agreed to run a tunnel to the ledge. To have south two feet wide on man employed who has agreed to run a tunnel to the ledge. The vain is about two feet wide on the ledge. The low grade, it is a paying proposition.

The Cold Bay is in a very good locality to be cold to the later of low grade, it is a paying proposition.

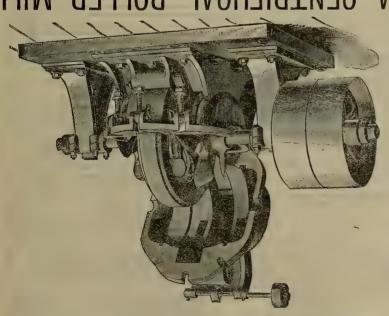
The later is a series of the south is a paying proposition.

OCCIDENTAL.—Work is progressing as usual on e. 48, 100 and 200 levels. In the lower tunnel upties. No. 2 was extended to feet; total length, 251
et. This uptaise is in quartz showing value by
323.

ANDES.—On the 240 level are running north along the course of the veta. On the 175 level a crosscur is being pushed west. Are cleaning out the station at the 350 level preparatory to resuming operations at that point.

promising body of quartz and ore found in the Crown Point, at the 400 level, will extend into this

# EEISBEE-LUCOP



-FOR WET OR DRY-

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of amalgamation may be applied.
At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh dry, and from 3000 to 6000 pounds wet.
All wearing parts easily and cheaply replaced. May be seen in operation at the New York Metallurgical Works, and to observe the seen in operation at the Metallurgical Works, and 106 Weshington St., and Pacific Iron Works, San Francisco. Oerificates as to performance of the Mills, and any information required, furnished on application.

LHE EKIZBEE-LUCOP MILL CO.

Office, 145 Broadway, cor. Liberty St., NEM YORK,

HOOKER & LAWRENCE, Gen'l Agents.

MOBKS IBON

N. W. Corner Main and Howard Sts., San Francisco,

and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES, CASTINGS AND FORGINGS OF Every prior

IMPROVED PORTABLE HOISTING ENGINES. ALL WORK TESTED AND GUARANTEED,

NATIONAL ROCKER QUARTZ MILL.

KENDYFF,8 PATENT, AUGUST 24, 1886.

MARSHUTZ & CANTRELL, Sole Manufacturers. CAPACITY, 12 Tons in 24 Hours, 8 H. P.

The Pacachee and Manutacturers cordibily invite and pass judgment upon examine and pass judgment upon this improved system of milling and amalgaments ores in the tol-lowing particulars.

1. The cost is less than one-half of same capachy.

2. The tright to mine is less than one-half of same or pachy.

3. The cost of erecting is less than one-half of samps or one-half of samps.

4. The cost of erecting is less than one-lower to drive it is less than one-half of samps.

5. The cost of erecting is less than one-lower to sample of samps.

6. The samps are successed to the samps of the sam

We challenge competition with Stamps, Ball Pulverizers or any other ore crushing machines now

MARSHUTZ & CANTRELL.

The 16th year will begin Wednesday, Aug. 3, 1887.

Address MRS. R. G. KNOX, Proprietor, or MISS FRANCES A. DEAN, Principal,

1825 Telegraph Ave., Oakland, Oct.

School for Girls and Young Ladies

**LIELD SEMINARY!** 

Send for Circulars and Price List.

Engraving Superior Wood and Metal Engrav-ing, Electrotyping and Stereotyping



# GREGORY &

San Francisco, Cal.

Cor. Fremont and Mission Sts.,

MASSEY'S STEAN HANDERS, SCHLEUKER'S BOLT CUTTERS, ERS,

BEVDIEL COSHIONED HYMMERS

STURTEVAUT BLOWERS AND EXHAUSTS. BERIN BYND SYM BLYDES. MEBBER CENTRIFUGAL PUMPS.

BLAKES IMPROVED STEAM

REMENT & SON'S MACHINISTS TOOLS.

CHINISTS, TOOLS.

WEW HAVEN MANUF'G CO.'S MA-NYCHINEKA: EBYNK & CO', 2 MOODMOBKING

MACHINERY. J. A. PAY & CO.'S WOODWORKING

BICKLORD'S POWER DRILLS.

TURBINE WATER WHEELS. BEVIEWED MITTING MYCHINES

SHIMER MATCHER HEADS.

SOLE AGENTS FOR

SONTAL ENGINES, PAYNE'S VERTICAL AND HORI-VALVS ENGINE WORKS ENGINES encinez' mittivazon beoz, hoizling

OLLO SITENT GAS ENGINES.

PICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY,

NATHAN AND DREYFUS OILERS

KORTING INTECTORS AND EJEC-

IZC CO'S KUBBER COODS. MEW YORK BELTING AND PACK-

H. W. JOHNS' ASBESTOS PACE. TYME YND BODIEK SYM MIFTS.

YACHT ENGINES.

FROM 2 TO 100 H. P., ALWAYS IN STOCK

SUPPLIES AND LUBRICATING OIF2 TTIW

# **TENBERGER'S ROLLER ORE CRUSHER**

Carradia bra aldarro Weight, 4 Tous. Crush 8 to 10 Tons per Day.

It is a full fledged Quartz MIII without gearings, cogs or pulleys.

Power applied direct. Works Ore at Low Cost Ore for the foreign machines in reducing and manifest ore, mechanises in reducing and small-smatter ore, and costs ofter machines in reducing and manifest ore, and costs of some ore foreign millinguity. Splendid for low-grade ore one costs of working.

WM. QUTHERBEGEN

Sacramento Foundry.

Sacramento Poundry.

Sacramento on this mill will be prosecuted to the full orking:

W.W. GUTENBERGER,

to Foundiy, Cor. N and Front Sts.

SACKANENTO, CAL.



# PERFECT PULL

First Premium Awarded at Mechanics' Fair, 1884,

E E E M E Solo Licensed Manufacturers of the

of California, Oregon and Nevada, and the Territories of Idah , Wyoming, Utah and Arisona. Lightest, Strongest, Chear Best Balanced Pul.sy in the World. Also Manufacturers of Medart Patent Wronght Rim Pulley

SHAFTING, HANGERS AND APPURTENANCES

Nos. 129 & 181 Fremont Street,

San Francisco, Cal.

# Retallurgy and Ores.

## SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, COFD VND SIFKER BEFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, .... NAKNUPAOTURINES OF....

LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

Under Chamberlin Patent.

## JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

114-118 Pine Street, -GIZLS, GEVƏSMYKE VAD SAADKIES' ELC CHEMICVE VAAVUUL VAD GHEMICVES'

rapplication.

For Unt Gold and Silver Tables, showing the value per compared to the control of the control of

## Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

Mear First and Markot Streets, S. F.

C. A. LUCKHARDT, Manager.

Отея worked by any Process.

Working Tests (practical) Made. Plans and Specifications furnished for the Ores Sampled. Assaying in all its Branches, Analyses of Ores, Minerals, Waters, etc.

nost suitable Process for Working Ores

Special attention paid to Examinations of Mines; Plans and Reports furnished,

O. A. LUOKHARDT & OO., (Formerly Huhn & Luckhardt, ) Mining Engineers and Metallurgiets

318 Pine St. (Basement, METALLURGICAL WORKS.

G. KUSTEL & CO., Mining Engineers and Metallurgists. cesse. Assorting and Analysis of Ores, Minerals and Waters. Mines Examined and Reported on. Practical Instruction groom Treating Ores by in

This Fire-p-ool Brick Building is centrally located, in the Grand and Pelace Hotels, and close to all Steamboat and Ealiroad Offices. 44 Third Street, San Francisco, Cal. MINCHEZLER HONZE

Landty Free for the use of Families HREE.

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

J. POOLEY.

Practical Treatise on Hydraulic Mining. By Aug. J. Bowie, Jr.

SEND FOR CATALOGUE QUARTZ MILL. Hantington Centrifugal

HCS and TROMMELS, CORNISH ROLLS,

**ENCINES AND BOILERS.** 

SHIP FOR CATALOGUE AND THETIMONIALS.

This Mill as a Crusher and Pul-vericer is without rival. Is in operation in lead-

STURTEVANT MILL.

'samna

MACHINERY,

CORNIZA

**ENCINES** 

BOMPING

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.



DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

MEXICO OFFICE: No. 11 Calle de Juarez, Chibuahua, Mexico.

Room 48, No. 2 Well Street. NEW YORK OFFICE: GENERAL OFFICE AND WORES: Fulton and Union Streets, Chicago, III.

UTAH OFFICK-SALT LAKE OITY, UTAH.

# Mining Turdine Water Wheel. JAMES LEFFEL'S

These Wheels are designed for all purposes where limited quantities of water than the property of the construction of the construction and the construction are designed by petter design of the construction can applie the construction as well are construction, as well are the construction, as well are the construction are construction, as well are the construction are constructed by applying to the manufacturers.

1AMES LEFFEL & CO.,

or 110 Liberty St., New York.

TRAMWAYS

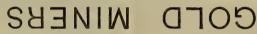
ENCINES'

MIKE ROPE

Springfield, Ohio,

FRASER & CHALMERS, General Agents, Obicago, Ill., and Denver, Col.

PARKE & LACY, General Agents, San Francisco, Cal.



Working

Quartz, Gravel and Placer Mines!

Silver-Plated AMALGAMATING

HYAE LEGAED THE MOST ECONOMICAL AND SOCCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

653 and 655 Mission ST., San Francisco, Cal. E. G. Denniston, Proprietor.

# THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

> ETC., ETC. ASSAYERS, CHEMISTS, MINERALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

will be giad to eand free by mail, postage paid, to any will be giad, to eand free by mail, postage paid, it will apply. Also a Mew Lakelyntey, Also a Mew Lakelyntey, Also a Mew Lakelyntey, Also a Mew Lakelyntey, Indiang, Parkern-Making, and Mekal Working, Mondiang, Parkern-Making and Mekal Working, Awolol covaring the free upon papers, and scientific Books, 96 Artis, eant free, and tree of postage, to any one in any whole covering every branch of Glernes applied to the Artis, earl free, and tree of postage, to any one in any art of the world who will furnish his address. Also world who will furnish his address.

Industrial Publishers, Booksellers, and Importers, HENEY CAREY BAIRD & CO.,

18. Walnut St., Philadelphia, Pa., U. S. A.

### SHAREHOLDERS' DIRECTORY. MINING

fl ylut	anom 826dssM	Lsinorite	Russel Reduction & h
7 14A	Lette Oliver 328 Mont	W. abayeviob abox	Paradise Valley M Oc
Acw York		California	Original Hidden Trea Plymouth Con M Co.
7 vinc	Wetzel522 Mont	TaimolilaDoD 1	De bec Blue Gravel h
OE IN S. F. AMOUNT, PAYABLE			MAME OF COMPAN LaV & simolification of Val
	*		MANOD SO SHAM
ex the lenneh 38 gremos	DENDS-WITHIN T		OO W HITT BIOY HOLD
Somery St Agained 38 yrangs		L. signosias	McMillen S M Co Mew York Hill M Co.
85 vincAnnual38 vrem. 3	B Paul Jr 328 Mont	A., starofilsU0U	Mountain Tunnel M
72 vlu L Jeuna A 32 viemos			M notgnidssW vbs.J
Sylva St		GsigrofileDoD M	oo made south a
72 Yluc		W Shiftornia	Benton Con M Co
30 Pine StJune 29	Е	T	Almont M Co
OR IN S. F. MRETING DATF.	ECRETARY. OFF	Z. LOCATION, B	MAME OF COMPAN
פוים:	ELLINGS TO BE HI	TIVE	
ug 18 A Berry 434 California St	A et glut e anut . 22	IsinrolifaD	True Con M Co
ag 23t H Holmes309 Montgomery 5t	A6 3.nA7 ylut08	M Co. Ca ifornia, 1 Nevada, .88	Cayago Company and
pt 13. W L Oli er 328 Montgomery St	28 91 gu A It viut 30	RuozirA M .	OU M HOU ISHIT
tug 16., H F Hiller 205 Battery St	25 32 vint12 anut62	IsbavaM	P J Keyes M Co
ng 23. D Buck 309 Montgomery St		sigra lifeD.o. M	Paradise & L A G & S
38 aniq 088 gg V. of Mandrau A A., CS gu			Occidental M Co
aly 29 Montaio 328 Montgomery St.	C a Ymc Z ourc cz	65sintottlsO	Maydower G M Co.,
ug 10 D Buck 309 Montgomery St	A (2 ylu C dl oan C du	California I	Mocking Bird M Co.
48 yramoginoM 288 toxia W T8 yr. 48 yramoginoM 608 toxia A D08 yr.	A01 3uA 3 glut 62	6sintofileO	Mexican G & S M Co
uly 160 F Von Rhein, 524 California St	L 05 ann L., 82 gam., 10	g signotile()	Inyo Marble Co
ng 31., J F Lightner 309 Montgomery St	A 01 30 A 7 VIU. C 03	Mevada	Hale & Mo cross M O
uly 25. W L Oliver 328 Montgomery St	L OE SADL. OS YSM GI	.IodebI	Heath M Co
ug 2., A E Durbrow309 Montgomery Se	50luly 6Aug 158	. dc absve M	Gould & Unity 8 M.
38 Themograph Sig Jose W T. 08 Bu	A,e guA è vinc01	6ZsidrolileO	
ug 2 L Osborn, 309 Montgomery St	A 8 Tub 8 saut 03	78 BDBV9 M	Best & Belcher M Co
48 viewegland eog, and and J. IS 4ge			Bulwer Con M Co
BALE. SECRETARY, PLACE OF BUSINES.	ги,т. Гелівр, Вегінц'ит	LOUATION. NO. A	COMPANY.
	ASSESSMENTS.		
RITITIO PRESS AND OTHER S. F. JOURNALS.	OR GUA DUINIM HI STURME	SITARVOA MOST VACERUI	COMPLEAD BYBRY TE

-		w	UU.	OF	24	-	-	*	ч	•		-	м	-		æ.	ю	BI.	1	JЦ	3	ΔŞ	1-	=	12	Δ	22	LL.	<u> </u>	111	U	ч
•		0	02	7.		1	• •		•		9.0	• •		0.5	×	3	i e	••	Œ	o	п									OP		ı
		0	00	ž	٠	• •	83		ю				O	4.1		• •	0.9	4.0	9.1	0	4.8	24								B		ı
		ல்	08	ř	-5	iks2	n	αA	g,	īn	W	Ι			94	ж	Λ	OO.	100	m	0,	'n	10	17	ne	ĸ	ATT	9 4	nο	чB		ı
_		9	8	L	ĥ	* 1	٩,	O.			b	н					Ų	ŲΉ	N	ĭ	."	Ų	à	ы	ä		**	'n	oo.	qs		ı
								м							w	٠.											٠.			BA		
19	^		97	g	ü		Ü					п		n				П	ì,				ĸ,	ı		, q					-	ı
Ŋ	g		98	9	Ĭ.	ì	n	ш	ш	ï	п		H	۳	۳	•														EV	Τ,	ı
21		(0)	61			"	М	•••	•	М	۰	ч	ч	•	•	•	•••	•••	н	ч	•••	. 6	49	ıəı	qe	P	KO.	${f B}$	94	Œ		ı
н			121		•																• •	•••	•	*						uŢ		ı
=		<b>6</b> 0	6I		۰	•	•	•	•	• •	•		80	• •	•		• •	•••	**		Œ		•	•	٠٠,	8	ıμ	13	89	पुष्ठ		ı
3		0	61		٠	• •	•	20		• •	• •		1	٠.	•	• •	٠.	• •		•			•	•	• •	• •	**		211	RC		ı
																											_	H	6E	ao	0	ı
-		0	00	Ω£	٠,	• •	•	П	•			• •	۰	٠.	4.5	•	* =	• •	**	ю				T	.0	N	. 6	87	10	98	-	ı
=		8	05				9.5	•	4.6	6.0					91			• •		6.4										ã		ı
00	23	(a,	00	L		* 6	81	9 =	• 4	4 =	9.1			٠	٠	• •	9.9	0.4	1	0.4			10	4	ŝ	a	Ŧ	ô	8a.	iõ		Н
ñ		Ď	-00	ъ.	٠.	. 9										• 1	TO	a	ly.	10		7	0.7	'n	CI	H	RO	TT	эп	IÀ		
9		S S	-		٠		4.5		• •	٠.				ď.	2.5	··	•••	۲.	k	·ì	7.	٠.	К	7	00	67	70	<u> </u>	TT!	ें ज		
,=	30	22			и														٠,		-	_								- A		

San Francisco Metal Market.

THURSDAY, July 21, 1887.

ANT IMONY—French Star......

g		(O)	g		••	• • •	**	•••	* *	•••	•	• •	•••	100	ш	1	• •	•••	•••		6	880	Se	OLI.	A	
48		(0)	¥2		**	• • •		• •	• •	•	••	**			ĸ	DΠ	ιp	18	ш	न्द्र	UE	B-	-x	EV.	Bo	
09	9	(0)	09	g	**	• • •	• •		• • •	10	• •		**	**	•		•	• •	• •	• • • •	• • •			18d		
99	-	0	09	š		• •				•	•	• •	**	• •	•	• •	٠.	• • •	9	OK	n-	-H	TA	IL	NIJ.	
ÞΪ		0	OL		**	• • •	• •	••	••	• •	• •	• •	• •	• •	•	••	• •	• •	•	•	ōο	28	10	FÀ	N	
9		0	44		9.0		P =			201	В	4 =	••				-	**	* 0 4		۵.	191	u	138	W	
9		60)	į.		20		• •	2.5			9.8		• •				• •	**				• •		JOH		
_		த்	Ŕ		411	11.9	• •	• • •	100	12.5	щ	88	ZI	8	Č.	BU	119	20	"K	u	m	BIL	ТЯ	[38]	ब्र	
22		Ø)	9T			1 1 1	4.4		144	1.0	×			0.0	9.9		**	(	п	U8	n8	u'A		TH	BTE	
_		00)	48		9.61		B b			ш	1.0	1 4		9.0	11				4					BE		
_		80)	gn	Y	0.5		- 4	9.0		10		0 0							100					88		
-		ക്	in.	OF							0		••	'н	SE	ш	OT	12	ďα	_					gu	
		á	02	D						101					**	11					°OI			TI 4		

## New York Metal Market. Sheet, 7x3 ft, 7 to 10 Ib, less the cask...... 64@

Telegraphic advices dated July 21st give the following we York prices:

The graphic odvices dated July 21st give the following New York prices:

Boak x. — [466] pt 02.

Gopphy July 22.00.

Gopphy July 22.00.

July 22.00.

The collowing is the latest by mail from the "New York Meel Exchange Market Hoport":

And Collowing is the latest by mail from the "New York Meel Exchange Market Hoport":

The collowing is the latest by 16.50.

The collowing is the collowing is the latest by 16.50.

The collowing is the collowing is the latest by 16.50.

The collowing is the collowing is the latest by 16.50.

The collowing is the collowing is the collowing is the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in the collowing in the collowing is the collowing in t

## At Anderson Springs,

ey and over the base of Mt. St. Helena into a lukeride to Oakland, along the bay shore, across the straits to Vallejo, through the delightful Mapa val-The place seems steadily improving and increasing in popularity, It is the nearest to S. F. of all the fallightful and healthful plasaure resorts in Lake county, being reached in eight hours by a beautiful and along the hay species the Middletown, Lake Co., the proprietors are enjoying a season of unusual prosperity. The guests have: Deen numerous, contented, and in fact, delighted.

IMPORTATIONS from Mexico in the Paso del Morte district, during the last fiscal year, show a great falling off, especially in wool and eattle,

# Isble of Lowest and Highest Sales in S. F. Stock Exchange.

NAME OF

	00°¥	3,60	3,10	8,95	1'20		07.I	99'1	Kentage Mack
	94'I	ng T		02.I	07.I	GP. I	c9'T		ustice
ł	68.	94.	1.00	87.	GZ.	*****	US.	07.	
	05°T	1.25	37. 1	****	09'I	****	I°12	0Z.I	
	*:				27.5		****	2017	•••••воперпедери
	2,00		0012	****		****	00'%		Tolmes
	97.9	62.8	06.0	06.6	0019	<b>#</b> 9	32	07.4	Tale & Morerosa
	52.8	08.£		4.05		3,15			Fould & Curry
ļ	40.4		01.2	09°T			1,6U	CC'T	Sand Prize
ľ	08. I	gg'Υ		€₽. I		35.1	UC, I	GC. I	hequer
i	87.8	62.25		06.6		20.1	6.00	97.6	·······αοn saeini
ĺ	35.0		06.	02.5	04.3	****	00 5	04.7	B. & B. 18.82
ı	62.	• • • • •	CZ*		***	****			
ı	92-	gg.	04.	09*	co"	09°	99"		)6ntral
ι	1.50		1.30	1,00			00°T	06.	Procket
Į	79T	13	30	FOT	2TT	98'6		09.7	rown Point
ı	30	cg.	100		GZ.		62,	03.4	on. Pacific
	06.		00 Τ		8.	89.	07.	gg"	
	3,25	3,10	1 00	99.5	20.0	21.2	0.2 . 2	2.15	
ı	10		VII	8.75		31.0	30.0	#g	ondence
ı	00.6	90.7				81	82.8	00 4	hollar
ľ	00 0	00.2	₹6.	87.7	.50	82	30.0	00 4	
l	3.15	0117	3.80	2,45	00.14	2,25	01*7	00'I	
ľ	222	FIZ°		912 912		12	9ZZ	08.	On. Vs. & Cal
I	1.16				1.00		30°E	.00	my wer
	31.1	no t	1.05	00.1	00 1	uo.	30 F		feanuT eibos
	09.2	05.2	02.2	02.2	PC'T	06°I	01.2	09°T	
	08.2				09.2	G# , S		08.8	
	98 I		2,95 1,35	02.I			81.1 0a.2		
	0₽. <b>L</b>			01.1			90. I	06°T	saltimore
	66.2		1.70					00,8	
			2,95		2.20		6.%		
	32,8	56 L	00.6	00.7	7 75	62.25	36 4	00.9	TedaleH & zee
	Tor	0010	Tow.		00.0	0110	Om * B	0210	Aditoria santa
	FSI	00,6	ear	FT. T	00.6	87,8	26 4	94.9	19(1)(a)
	04.	0017		86.		ontr	0₽'	0417	ruges
	67.I		38.1	OF I			1.40		
	2.75		3.00	2,40			2.20	1.943	
	5.00	05.4	00.0	00,₺	00.4	06,8	37.8	3.50	

g-8	00°Z	100 6	09 2	00.8	0.4	8 10	56 4	10040
6.2 8.3 8.3	2.40	3,35	67.2	07.2	2.20		28°I	vermanreminev
¥6	01.8	76	94.8	<del>26</del>	00.8	8 20	94.7	phirxidq
3.1	06.2	3.40	3.25	5 25		2.00		ceidental
9"	09°		091	7.7				O 36 . D d310
2°9	0p.4	#g	98°₽	00.8	34.45	69.₽	04,40	ет. Queen
	# 41b							
OT.	₹6	3.0	94.6	FOT	8,76		67,8	orth Belle Isle
1.4	gg T	09°I	99'I	9₽"I	1 30	1.40	1.25	Sysjo
			****					
3.7			****					t. Diablo
2 9		06.6	4.55			87.A	₹0°₽	
7.2	05.2	92 8	2.30	5 2		9.50		опо,
							****	estid W nista
6	28.	7°02	06*	06"	08,	gg°	67.	das W yba

			****				***	
£8	0017	2.6	₽g.	29	97.9	67.6	#g	low Jacket
2.20		SP. 2		26°I		06'I	69, I	
JI.P		09 ₱	3.50			3.40	3.00	τοπ Ωου ποι
10.	02.			02.	****	*:	**	dicate
)6°.	68.	30		08.	04"	08*	0.11	uoign
70	÷8	oo r	08	90	UL.	vo.	07.	ver King
		03*	00"	004	Ĉ₽,	09,	S₽.	Hill
2.2 9.		31,		ug,				
8.8	07.£		4,45			g*#	00 F	
4 5	3.70		3 25		2.35	3 80	67,1	Belcher
6.7	92.9	SZ. Z	62.85	89	<u> 29</u>	5.25	08.4	, , 63 <sub>8</sub> 8
	****		****					1818 194
E"	OX.	GI.	Of.	OX.		OI.		asbi əd8
Z'I		0).I		04.	09*	gg*	S₽°	
2.2	01.1		32.1		ce.	\$0°T	ça.	
8.5	00.7		09 4			00.8	55° 4	
2 C			64.2		02.2	07 5	28.I	
6.2 66		3,85	67 6	04.0			20 1	
40	01.8		8,75		00.8		27.75	
3.1	06.5		32,8	2 25		00.2		
9"	09°	02.	09"					O & D d31

## Sales at San Francisco Stock Exchange.

Беврф	Хепом лас	097	GP.1		Justice	099
JU. Z	uean	ngt	190)f g***	10	H का छ है।	(29
09.6	Union Con	120	20	Curry.	Gould &	00₽
26.2@3e.gren	Seg. Belci	500	0g.I	10	nbegozg	210
20g	Syndicate	TOO	202		Caledoni	00G
UG.#	SIGILS ING.	100	01.1		Crocker,	200
Law garage	Savage	USUL	ACTON) FZE	2TIO	Crown P	0291
548-1	Peer	30	\$12	[gO 3	Соп Уя	440
ogl	Peer	098	¥2 *****		Chollar	100
9E 1@08 1	Peerless	200	0₽.2	<b></b> 00	Benton	100
£7.00 £7	Potosi	OIL	00.2		Bodie	220
g	Occidenta	04	oce		Bulwer	200
08.8	JIRITIANO.	1230			Baltimor	320
\$500)8********	ziútąO	087	\$0m0"""		Belcher.	3180
for	N. Belle E	120	62.2.		B. & Bei	012
gc@ {cπε	Nev. Que	096	1,	лөцс	म् ह्य प्रभाव	100
UC. L.	otavaM	200	o04		Argenta.	300
og Z	oao M	100			Ailantic	OSII
%b	Mexican.,	TOO	00.4	******	sdqlA	0ct
p58di	Lady Was	800	SP.1		Andes	300
00.8	Yama	OI	7881 1,35@2.40	2	83LA	0±I
201	Juna	1,9	1/981 '1	ann.	Y Adrati	H.T.

### Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subscription, and give it their own patronage, and, so fire as practicable, its value more widely formal, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

DEFINITION WITTER a page 18 and 18 and 18 and 18 along Mateo: "Thursday will all and a state ground;"

Governments the great necessity for withdrawing Governments the great necessity for withdrawing Government timber lands and State school timber a system for sale of timber alone under provisions in a system for sale of timber alone under provisions insuring the protection of young growth and the rewait of the forests say that as a such the sale in the south, central and north sections of the State ior experimental tree planting. These tracts are to be placed tree planting. These tracts are to be placed tree planting out to the board for a certain term of years, and proposals will be received for the laying out of the sale tracts as control of the board for a certain term of years, and proposals will be received for the laying out of these tracts as

### Mining Share Market.

The Virginia Exterprize that all the seesawing of pieces of mining stocks in this in the seesawing of prices of mining stocks in this city has lithing of prices of mining stocks in this colve so see stocks in the sown for some stocks on the people up there, who know some stocks on the seasawing of prices of mining of the stated on the people up there, who know some stocks on the seasawing stocks are story being stocks in the stated on the seasawing story story of the seasawing story story of a solid foundation under the market will be seen nothing story. These show that the market was the story story of a solid choundation under the mining story of a solid choundation and the story of story of the story of the story of the story of the story of the

### New Incorporations.

The following companies have been incorporated, and papers filed in the office of the Superior Court Department to, San Francisco:

1) ACIFIC JULIAN ELECTRIC Co., July 16. Object, 10 deal in electric apparatus. Capital stock, 15,000,000. Directors—Irwin C. Stump, James H. D. Dinson, H. B. Land, E. W. Lesser and Fred. M. Pickeson, H. B. Land, E. W. Lesser and Fred. M. Pickesoria.

ering.

POST PUELISHING CO., July 18. Capital stock, \$300,000. Directors — Smith Bartlett, Walt. L. Blown, S. H. Palmer, Chester Lynch, and O. Nolie. Directors—H. M. Bissall, W. C. Brown, W. R. Townsend, J. F. O'Brien and T. W. Chinn, W. R. Townsend, J. F. O'Brien and T. W. Chinn, July 19. Capital stock, \$20,000,000. Directors—E. Labaldie, J. Y. Bretonnel, P. Huerne, A. Goialy, J. Ching, C. Brown, July 19. Capital stock, \$20,000,000. Directors—E. Labaldie, J. Y. Bretonnel, P. Huerne, A. Giass and L. Pridon.

SONOMA VALLEY EXTENSION R. R. Co., July 19, Object, to build and op:rate a railroad from the town of Glen Ellen, in Sonoma county, to Santa Rosa. Capital stock, 3300,000. Directors—James M. Donahue, Henry C. Whitney, Thomas W. Johnston, T. K. Looke, and C. C. Lippett, The estimated length of the railroad is 16 miles.

### Bullion Shipments.

We quote shipments since our last, and shall be pleased to receive further reports:

Manhattan, 15, \$9599; Moulton, 13, \$13,506;
Alter, 13, \$20,996; Con. California and Virginia, (for June), \$293,944; Benton, 15, \$16,003; Con. California and Virginia, 16, \$66,029; Gamock, 12, \$15,003; Con. California and Virginia, 16, \$66,02; Bamock, 12, \$1500; Hansuer, 13, \$2800; Garmania, 14, \$1500. The banks of Salt Lake City report the receipt for last week of \$63,996 95 in report the receipt for last week of \$63,996 95 in organization and \$224,891.27 in ore, a total of \$288,888.22.

Off this, Wells, Fargo & Co. shipped \$129,2955; McCominic & Co., \$74,232; T. R. Jones & Co., \$25,431.

Our Agente.

Our Agente.

Our Agente.

Our Paper and the control in aid of our paper and the cause of practiced knowledge and science, by assisting the control in the cont

In June, Oon. California and Virginia crushed 4025 tons of ore at the Morgan mill, assaying \$15.22 in gold and \$360 tons of ore at the Eureka of \$31.55; and \$600 tons of ore at the Eureka mill, assaying \$10.98 in gold and \$13.69 in silven are rage of \$24.67. The total product was \$293,944; \$135,973 gold and \$15,97,971 gillour.

## Valuable Eucalypis.

noV nored to synitirw oft mort warb ow doidw nailertanA odt no seitirodina redto bna rellenM Monica, and as several of them are new to the State we propose to enumerate them and add notes of the characteristics and values of each, Kinney gave at one of the sessions an account of the several species of eucalyptus which the of the several species of eucalyptus which the The Bland of Forestry Commissioners has been in session this week in this city. Abbot

ot egailol to noitroporq resterng a lo egatarvba One of the species which is now growing at Santa Monies is Eucalyptus calophylla, or "Southwest Australian red gum." It has the

transition of the control of the con

## ELECTRIC DEVELOPMENT COMPANY.

lectric Motors, Dynamos, Traments, Elevators, Signals and all kinds of Electrical Systems for lighting and mission of power, either direct or with storage Batteries. Incandescent & Arc Electric Lights.

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

of. Over 600,000 lights in use in the United States SELF-RECULATIVG ARO LIGHTS into alghe to day and afford a means of working the whole 34 hours; invaluable to confractors and others to whom me is an object. Estimates and designs on application.

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

# CALIFORNIA VIGORIT POWDER CO.,

No. 40 California Street, San Francisco,

## NILHO-CILACERINE

Blastins or "Giant", Blastins Powders.

Vigorit "LOW" Powder,

FOR HEMOVING STUMPS AND THEES, ACT HOS ROLL,

WORKS: California City, Marin Co., Cal. EUKENS, Manager

# THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

CIVIL BOWDER of DYAMITE,

Of Different Strengths as Required.

NOBEL'S EXPLOSIVE GELATIVE, which contains 94 per cent of Vitto-Clycerine, and

FOR HAILROADS AND LAND GLEARING. Is from three to continue a ground, pulverizes better the extensive better and a med by all the failtreade and Crevel Claims, as it breaks more ground, pulverizes better and saved and money. It is as ally see the ordinary Blasting Powder and rums as freely. **11DSON BOMDER IMPROVED.** 

BENDWANN, NIELSEN & CO., et e. 8-10.

AFS and FUSE for Sale.



### S.'00 DEMEA



ESTABLISHED 1863.

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agents in Washington and the capital cases of the principal nations of the world. In connection with our editorial, scientific and Patent Law Library, and record of original cases in our office, we have other advantages has beyond those which can be offered home inventors by other agencies. The information accumulated those which can be offered home inventors by other accommistion of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us often to give advice which will save inventors the expense of applying for Patents unon inventions which are not new. Circulars of advice sent expense of applying for Patents upon inventions which are not new. Circulars of advice sent free on receipt of postage, Address DEWEY & CO., Patent Agents, 552 Market 5t, 5. F.

ATTENTION, MILLWRIGHTS!

Leffel's Construction of Mill Dams and Bookwalter's Millwright and A BOOK YOU ALL WANT.

Месћапіс.

A STANDARD WORK.

is branches. No engineer can anord to the wranches. Frice 50 cents, post-paid. For eale by DEWEY & CO., Frice 50 cents, post-paid. For eale by DEWEY & CO., This practical work of 888 pages gives with full ill that gives with full ill tratitors and complete detail how to build of a reparable and the form of the form o

ASSESSMENT NOTICE,

Morris Beer Preserver Company.—Loca-

JOYLUE is horeby place of the bearses, Sur Francisco, Cal., I., explore of vortice and processing the processing of the Discount of the processing of the Discount of the control of the c

Back First of the Minne and Scirviffe Passs (un-bound) can be find 14% sper volume of six mouths. Per year (kwo volumes) Sc. Inserted in Dewey's patent bind-er, 50 cents additional per volume.

and which may be carried from one vessel to the other and easily attached or rigged to the spare of the vessel.

HINERS CAMDINSTICK.—David B. James, S., sessions to H. A. Hontington, S. F. Mo. 366, 320. Dated July 12, 1887. This improved candlessick is composed of a continuous pures of wave baving two coils and a spring arm, one of the sate of the parts which project upon has a pointed and to secure it in timbers, and has a pointed and to secure it in timbers, and has also noted and to secure it in timbers, and has also noted by which it may be suspended. The weight of the parts which project upon each side of the parts which project upon about the may be campled by the hook the candle will remain in a nearly or quite upright position, and by this construction sither the hook or the point may be employed to suspend the candle sith of the parts of the candle will be according to convenience. MINERS' CAMPLESTICE, -David B. James, S.

EAUCET AND AUTOMATIC (?AS-VALVE.—Chas., 12, 1807. Thered July 12, 1867. This is a fancet and automatic valve as accusted that by the opening of the fancet the accusted that by the opening of the fancet the valve is opened to admit carbonic gas and allow it to flow backward through the fancet and into the cask at the same time while beer is nellow it to flow backward through the fancet. It is well known that by the introduction of carbonic ocid gas into beer within the cask it is greatly improved, and the pressure is at the deam out from the cask; and the improvement is assumitant out from the cask; and the improvement is destigned to provide a means for introducing the drawn out from the cask; and the improvement is said in the control of the destined to provide a means for introducing the gas simultaneously with the withdrawal of the proper points and the beer preserved in all its proper points and the beer preserved in all its enemption.

### To Inventors.

Co., Printers, 415 Market street, below First, San Francisco, Cal. CUBERY & style and at low rates. do every class of printing in good pared to make wood cuts, and to below First street. They are precation office, at 415 Market street, an office nearly opposite our publietc. Cubery & Co., Printers, have public by printing circulars, cards, bring them to the attention of the from your inventions you must In order to derive any benefit

### Don't Fail to Write.

Should this paper be received by any subscriber who does not ware it, or support the time we entired to properly of the control of the contro

### Books on Working Ores.

BY Guido Kustel, M. E.

Respective of Gold And Silver Ores (Second Edition) and the Extraction of their Respective Metals without Quicksilver. By Guido Kustru, M. E. 1880.

This rare book on the treatment of gold and silver ove filtent ducksliver; is liberally lithestraced and carmused filtent quicksliver; is liberally lithestraced and carmused vious processes and speparatus employed in but so contains 156 and in Europe, and the why ond wherefore. It contains 156 are used, as and the why ond wherefore, it contains 156 and or withing apparatus. It is a work of greek inertic, by a author of greek inertic, by a contains 156 and or withing apparatus. It is a work of greek inertic, by a contains 156 and or withing apparatus. It is a work of greek inertic, by a contains 156 and or with the contains 156 and or with the contains 156 and or with the contains 156 and 156 a

REAL'S LEARONING GOLD AND SILVER ORES, the most plotes bend-look on the subject extend; 164 pages are Illifingraphic engrevings and wood cuts. Fully indexed. Plainly writes for wood cuts. Fully indexed. Plainly writes for which men. In cloth, \$3. Sold by Drwer & Co., S. F.

## The Techno-Chemical Receipt Book

NOM BEVDE.

THE TECHNO-CHEMICAL RECEIPT BOOK.—Consciently and present all constant describes, covering the Latest Acts of the Latest Acts o

HENRY CAREY BAIRD & CO., Industrial Publishers, Booksellers, and Importers, 810 Wainut St., Philadelphis, Ps., U. S. A.

### DIVIDEND NOTICE,

## The German Savings and Loan Society.

For the hell year ending June 30, 1887, the Hoard of Directors of the German Savings and Loan Society has declared a dividend at the rate of four and thirty-two one-hundredths (4 Sz.100) per cent per annum on term deposites and three and extyr one-hundredths (8 60.100) per cent per annum on ordinary deposite, pan able on and after the lat day of July, 1887. By order.

List of U. S. Patents for Pacific Coast

From the official report of U. S. Patents In Davar & P., S. Patent Office Library, F. O. Market St., S. F.

Acceptage of the Charles of the Char

14.591. — TRADEMARK — Websier & Sargent,

### Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SURWINTO Pares U. B. and Foreign Patent Agency, the following are

Foreign Fatent Agency, the following are worthy of special mention:

DESIGN YOB A BAROE.—Ches. Hadenfeldt, B.
F. No. 17,040. Dated July 12, 1887. The leading features of this design are a representation of the coat of trins of california in a central medialinon or eat auromoted by the figure of the coat of arms of California in a central medialinon or eat auromoted by the figure of a bear, while upon opposite sides are the representations of the American flag and the original bear flag respectively. Beneath this is a critical bear flag respectively. Beneath this is a coll, and beneath this again is a ctar.

F. Terrar, S. F. No.

FOLDING BED.—B. E. Ferrar, S. F. No.
FOLDING BED.—B. E. Ferrar, S. F. No.
FOLDING BED.—B. (2012).

36,513. Dated July 12, 1887. This is one of the control of the colling, beds in which the bed fall of July beds of Lift, 3. This is one of the colling beds in which the bed farms and escotional, and is adapted to told farms within a suitable casing, which forms, when the bed is olosed, a cabnet or wardrobe. It is bed is olosed, a cabnet or wardrobe. It is bed is olosed, a cabnet or beds in which the particularly of the collines, and is monnted upon changeable or movable pavots, whereby it is readily adapted to be folded to its position and again construction. The patent covers certain construction of the patent covers certain construction of the patent covers certain construction of the construction of the construction of the construction of the construction that were the construction that construction that the construction further consists of the middle of the bed trame, is side odges of the middle of the trame while its invention further consists of the middle of the bed trame, which is the consists of the middle of the bed trame to which it is attended. The object is to make a wovenwrite mater of the invention further consists in the articles more confortable to lie upon the middle of the bed frame to which it is attended. The object is to make a wovenward that the confortable to lie upon than the colore.

The luck and the confortable to lie upon the confortable to lie upon the colore.

The luck and the colore.

METALLIC LATHING. Daniel Pr. M. Little, the based of the dipole.

METALLIC LATHING.—Daniel P. N. Little, S. F. No. 366,328. Dated July 12, 1887.

This invention relates to that class of metallic strong as a bond to the plearate elevations and elevate lath, and which serve as a bond to the plaster. The invention consists, in connection with a strong and elevation consists, in connection with a cross-ties formed by the depressions and elevation formed by the depressions and elevation, and which serve to close up the opening tones, and which serve to close up the opening the proof. It consists, also, in connection with a metallic lath of the place of the strips may be secured to the back of the lath direction with a metallic lath of the place of the strips may be secured to the pack of the strips may be directly therefore, whereby said strips may be fittled and securing as the strips of tense of the strips and tense study and it further consists in a novel means for securing said iron channel strips to the lath and to securing said iron channel strips to the lath.

for secouring said iron ohannel strips to the lath, Gamuel. Chard.—Bamuel.

Murray, S. F., No. 366,343. Dated July 12, 1887. This is an apparatus for disoharging ballset or cargo from vessels. It consists of an attachment to the hoisting-bucket, and in connection therewith of a device fixed to the end nection therewith of a device fixed to the end rigging, with connecting ropes and tackle of a boom or at any other suitable point in the rigging, with connecting ropes and tackle and read and the proper are used, the nanal appliances require a system see used, the nanal appliances require a system at the pand and a number of men to operate these devices. This invention is designed to furnish an automatically working mechanism which is easily operated by the seeds of the seeds o

# Iron and Machine Works.

CALIFORNIA MACHINE WORKS,
WO. 119 Beale St., - San Francisco
Wo. 119 Beale St., - San Francisco
Word Barliage St., - San Francisco

Steam Engines, Flour Mill,
Mining, Saw Mill and
Dredging Machines
Brodie Rock Crushers

Brodle Rock Ornshers, Proteing Mechines Steam Power, Hydraulic, Side Walk and Hand-Power BLEVAPORS, Manufactures of E. Hardeleen's betset Autorice

anulacturens of B. E. Henrickson's Patent Automatic by Catches for Elevators. All kinds of machinery c and repaired.

## HALL'S BOILER WORKS

J. V. HALL, 804 and 306 Beale St., San Francisco, Cal.

Marine, Stationary & Portable Boilers. PRACTICAL BOILER MAKER

Smoke Stacks, Hydraulic Pipe, Oil or Water Tanks, Ore and Water Buderls, Geoconeckes, Girders, Bridge and Iron Ship Building. All kinds of Sheet Iron Work. Re-trong Ship Ship and Ship and Ship Ship Ship Ship.

## Golden State & Miners Iron Works.

Marufacture from Castings and Machinery of all Kinds at Greatly Reduced Rates.

And Board AMALGAMATORS,

Golden State Pressure Blowers.

First St., between Howard & Folsom, Sta

EUREKA FOUNDRY тномрѕои впотнеяѕ,

23 and 131 Beale St., between Mission and Howard, S.F.

MANUPACTURERS OF CASTINGS OF BYERY DESCRIPTION

o, r. orton.

Williams & Orten.

Works, Vo. 31b Mission St., San Francisco.

Special attention given to Woodworking Machinery,
Steam and Gas Engines. Correspondence solicited.

MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

Address "Business Box A," office of this paper, San MINING EXPERT AND GEOLOGIST.

ROZZ E BROMNE'

Mining and Hydraulic Engineer,

No. 807 SANBOME ST., SAN FRANCIBCO.

American Exchange Hotel,



CHAS. & WM. MONTGOMERY, Prop'rs.

COAST, COAL MINES OF THE WESTERN

A few copies of this work, the only one ever published treating of Faufic Coest Co. Affaining, have been obtained, and are for water for the off or \$2.60 per copy. It written by W. A. Goodyear, Mining and Civil Engineer, written by W. A. Goodyear, Mining and Civil Engineer, formerly of the California State Geological Survey.

INVENTORS, TAKE NOTICE!

L. PETERSON, MODEL MAKER,

258 Market St., N. E. cor. Front (up stains), San Francisco, Experimental machinery and all kinds of metal, tin. copper and brass.

NEWHAL

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products. General Insurance Agents.

General Agents for the Pacific Coast of WATIONAL ASSURANCE CO., of Ireland ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass Have correspondents in all the chiet cities of the United States, Europe, Australis, India, China and the princi slands of the Pacific. Furchase goods and sell California products in those countries.

Ово. W. Drokir, Маракет. J. О.В. Стий, Secretary.

Office, 216 Market St., S. F. Location of Works, Potrero. P. O. Box 2128.

Agents of the Cameron Steam Pump. STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

Ветовтз, Етс., Етс. Polleys, Self-Feeders, Rook Breaker Воок Виелкия, Уемтільіні Рамя, Воок Виелкия, Раиз, Зеттьевэ, ETMATS,

VERTICAL ENGINES, COAPENCINES, COAPPOUND COAPENCE ENGINES, SHARTICAL ENGINES, CHARTICAL E

TRY OUR MAKE, CHEAPEST AND BEST IN USE,

**UNION IBON WORKS,** 

Successors to PRESCOTT, SCOTT & CO.

HINCKLEY, SPIERS & HAYES, Proprietors. IRON

office, 230 Fremont St.,

San Francisco

-NAMURACTURERS OF-

MINING MACHINERY.—Hoisting Engines and MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or Compound, Stem or Side-whoel Engines.

Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

MILL MACHINERY.—Batteries for Dry or Wot

Crushing, Amalgamathug Pans, Settl rs, Furrages, Retors, Concentrators, Ore Feeders, Rock Breakers, Furnages for Reducing Ores, Water Jackets, etc.

MISCELLAWEOUS MACHINERY.—Flour

Mill Machinery, Saw Mill Engines and Boilers, Dre Machinery, Powder Mill Machinery, Water Wheels.

WORKS ORE WET OR DRY. Tustin's Pulverizer

DEFINE STEAM PUMP.

ENGINESBOILERS

OF ALL KINDS,

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries Either for use on Steamboats or for use on Land.

OP EVERY DESCRIPTION. Ider Repairs Promptly attended to and at very moderate rates.

Deane Steam Pump.

PACIFIC ROLLING MILL

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought

Iron in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS,

ALSO Steel Rods, from \$ to 8 inch diameter and Flatstrom I to 8 inch. Angles, Tees, Ohannels and other shapes Steel Wagon, Buggy, and Truck Thres, Plow Steel; Machinery and Special Shape Steel to size and described the STREL AALLS from I Co. 6 pounds per yard. ALSO, Hallroad and Merchant Iron, Rolled Beams, Angle, Channel, and Truck Tricke and Machine Bolts, Leg Screws, Nuts, Washers, Ship and Boxi Shikes; Steamboat, Sharke, Princip, Princip, Rods, etc. Gar and Locomotive Axles and Frames, Shikes; Steamboat Sharke, Princip, Bridge and Rooi Work a Specialty.

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL.

All Charles of all linds, 1ron and Steel Bridge and Rooi Work a Specialty.

All Charles of All Sharkes, Princip Steel Strige and Rooi Work a Specialty.

ad Iliw atebro 🖘

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

WINING WEN NOTICE TO

ENGINEERS, CONTRACTORS,

TUNNELING, SHAFT-SINKING, ETC. and others interested in

Engineers' Tables of Progress

WITH MAPS, ILLUSTRATIONS

NEM LOBK

Section 16x16 feet; Length 36 miles.

THIRD EDITION NOW READY.

For Catalogues, Estimates, Etc. address:

INCERSOLL ROCK DRILL CO.

PARKE & LACY

SAN FRANCISCO, CAL. 8 California St., and 21 Fremont St.

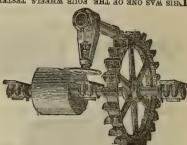


THE H. H. HOTS.

The property of the property

For Sale by all druggists

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED by the dacho Company as Carses Valley, Cal., and Cityculars and guaranteed estimates.

L. A. PELTON, Nevada City, Cal. Accept Accept the Carl Course Parket & LACY, 31 and 28 Fremont Street San Francisco, Cal.

If you want a good pair of Gloves, ask your merchant for

VUI. our brand.

SAN FRANCISCO. LEAK GLOVE MANUFACTURING CO.,

San Francisco Cordage Factory

Concently on hend a full assortment of Manila Rope,
Sias Rope, Tarred Manila Rope, Hay Rope, Whale
Line, etc., etc.
Extra sixes and lengths made to order on short notice
Extra sixes and lengths made to Roter Royer or Extra

611 and 613 Front 8t., TUBBS & QO.



PORTLAND, OREGON.

SAN FRANCISCO, CAL,

BALT LAKE CITY, UTAH.



Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and Machinery Iron Working

SEND FOR CIRCULARS.

HEINE SAFETY

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

DURABILITY,

AND FACILITY OF INSPECTION and REPAIRS. ECONOMA'

.ean ni won rewo earoH 000,08

Boilers can do scen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueber, Bros. & Co., California Jute Mills, and other places.

Guaranteed More Efficient than any other Boller made.

EEFRICERATING MACHINERY for Steamships, Browerles, and Cellars, STEAM BOILERS of all descriptions SUEAM BOILERS of all descriptions SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarificus, Double Effects, of STEAM SULLER.

Æ Builders of 120-stamp Gold Mill for the Alaska Mill and Mining Company; 60-stamp Mill for Quartz Mountain Min STEAMSHIPS—Steam Yachts, Marine Engin Pumps, Steam Capstans, Cargo Winches, etc

ARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces of all kinds, construction of the construction o

BOILER

**MATER TUBE** 

F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS, Centrifugal Roller

Mining Machinery of Every Description,

steam Engines and Shingle Machines.

SEND LOR CIRCULAR.

No. 45 FREMONT STREET, . SAN FRANCISCO, CAL.

Centrings, Koller Quartz Mill,

ORE CRUSHER.



PRECIPITATING VATS, LEACHING VATS WITH FALSE BOTTOMS.

For Mining Purposes. SOLUTION and WATER TANKS

WELLS, RUSSELL & CO.,

San Francisco. Mechanics' Mills



mc, Copper or Bress Screens for all purposes. Cali-rnia Perforabing Screen Co., 145 & 147 Beale St., S. F.

AMMILLS AND MACHINERY South loth St., Philadelphia. Branch Onser. Send for Descriptive Cata. Issue to order. Send for Descriptive Cata. Issue to order. Send for Descriptive Cata. Issue to order. Send for Descriptive Cata. Issue the Pacific Ocean. Is and 19 Fremont St., San Francisco.

## PNEUMATIC PULVERIZER, Mining Vats and Tanks.

## POWERFUL OPPOSING CURRENTS

IO TO ZOO TONS PER DAY,

E. A. LUCKENBACH, Sup't. PHEUMATIC PULVERIZER COMPANY,

2 and 4 Stone Street, NEW YORK,

Write for Particulars.

SAW COMPANY N. W. SPAULDING



Saws



and Salivation. Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

beriect appliance for people engaged in 'Dry Cumbing, Guano Worke, 'Dry Cumbing, Guand Office Stock-triville, Threshift was proported and lother compations is dust, posienous vapor, or bad odor, and graining Macchine, and similar are bathing Macchines, and similar are withing Macchines, and similar are distinguished when they are worn, which is they are worn, which is they are worn, which is the state of the state of

work, they are in dispensable, as no foreign substances can be infinitely when they are worn.

The Regardiactors are so of subject 'r approved after tribing and if not satisfactory the price will be refunded. Frice, and if not satisfactory the price will be refunded. Frice, and if not satisfactory the price will be refunded. Frice, and if not satisfactory the price will be post-paid to any Address communications and orders to address communications and orders to address communications and orders to address of the price of the price

SAN FRANCISCO, CAL

# HONE

(#212'00) E. O' B' DBICE: FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

THE MONTENA COMPANY (Limited), LONDON, October S, 1885. OVER 1400 ARE MOW IN USE. Concentrations are clean from the first working. The wear and seminal. A machine can be seen in working order and ready to make tests at 230 Fremont

M. E.—Since the above was written the 20 Vanners having deen started gave such estalaction that 44 ad di tional Frues and more stamps have deen purchased. Dark Sira:—Having tested three of your Frne Vanners in a competitive trial with other similar machines (Triumph), we have estisfied ourselves of the superiority of your Fours trily, we have estisfied ourselves of the superiority of your Fours trily, and your machines for immediate delivery. Yours trily, The MONTANA COMPANY (Limited), and ordered twenty more of your machines of the party of th

ADAMS & CARTER, Agents Frue Vanning Machine Co., Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; February 20, 1883; September 18, 1883. Patents applied for.

OR VANNING MACHINE. CONCENTRATOR OKE THE FRUE

Room 7, No. 109 California Street,

A NEW AND RADICAL DEPARTURE IN

GENERATOR. **STEAM** 

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

SEND FOR CIRCULARS.

PACIFIC IRON WORKS



MINING WACHINERY,

and WATER POWER MACHINERY COMPRESSED AIR

FIRTH, 18 and 20 Fremont St., San Francisco.



NATIONAL ROCK DRILL.

San Francisco, Cal.



WINEBS, HOBSE MHIW



KNICHT'S WATER WHEEL,

Over 300 in use. All estimates gu anteed. Send for Circular.

NATIONAL AIR COMPRESSORS. MILLS, PUMPING AND HOISTING.

SINGLE OR DUPLEX, STEAM OR BELT POWER,

MOTICE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are fested be-tors leaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry.

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

JUSTINIAN CAIRE, Agent,

BATTERY SCREENS AND WIKE CLOTH

HADEO-CYBBON VSSVA KOBNYCES Agent for HOSKINS'

THE RUSSELL PROCESS COMP'Y.

C. A. STETEFELDT, President.

Room 709. NEW YORK OFFICE, 18 BROADWAY

All wronght from. Wogeste, no breakage, the house that Goast. Has of \$60 feet, giving subire subistion to the prospector. Drite, complete, \$2.00. 160 sold on this Coast.

FOR SAVING GOLD! NOTICE TO GOLD MINERS!

IN QUARTZ, GRAVEL, OR PLACER MINES.

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER

FURNISHED ON APPLICATION, GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

No. 108 FIRST STREET. SAN FRANCISCO NOVELTY AND PLATING WORKS

CHILLED CAR WHEELS

IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS.

MEDAL AWARDED, MECHANICS' FAIR.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. STEIGER & KERR,

Continues to lead; fully guaranteed. Rendrones for the vertex feet of the vertex references, facts in which there are no AVOID IMITATIONS.

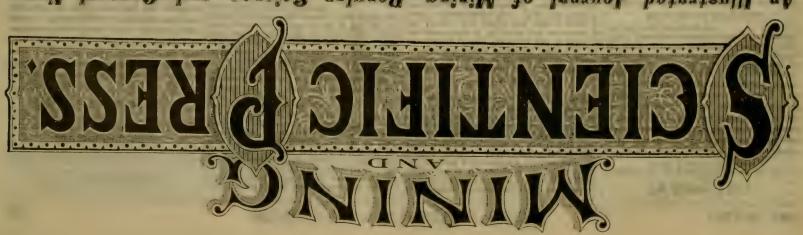
J. C. WINANS, Agent,

(ESTABLISHED 1855)

Anti-Incrustation Powder

SNVNIM

NOT MODISOMETY St., San Francisco.



## Illustrated Journal of Mining, Popular Selence and General News.

SAN FRANCISCO, SATURDAY, JULY 30, 1887.

The Hunt Automatic Loom, BX DEMEX & CO.

An Important California Invention.

asme time, the improvement relates to the most important portion of dooms, viz., the shuttle and its motive mechanism, and is of such a card any of the looms they now use. At the expense, menutacturers are not required to dissists merely of an attachment which can be in the dusiness. A point of great importance one to incompanie in The properties on the same of the confidence of the co soon as its merits become fully known to those ohine are die opinion shat the engrovement is adopt as a dopo film eradical manufacturers will adopt as a dopo of the manufacturers will a dopt of the manufacturers of the manuf Practical weavers who have examined the maseconsification of mechanical appliances. all kinds of textile fabrics, which is a marked adno mool gaivasw bevorqui as , atow lasaemine Hant, of this city, after many years of costly ex-There has recently been perfected by R. H. H.

We give on this page a sketch showing the general features of this loom, the improvements operation of the whole appliance. nt ni egnado facibar a sadam ti tant enutan

called, formed between warp threads, lays the from side to side through the "shed" sowithin it a small bobbin apon which the filling yarn is wound. This bobbin being thrown changes in the manufacture of woven goods. By present methods, weaving is done, as is well known, by means of a shuttle which carries in which seem destined to effect considerable

The objection to this method is, first, the small quantity of filling thread that one oserside operation of the state of

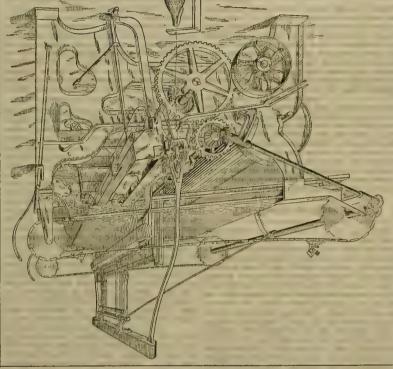
frequently breakages occur, and the time consumed in stopping the loom for repairing these riotate the fabrical and, thirdly, the size of the stores are stored and stores the fabrical and, thirdly, the size of the shorts and the bobbin that the warp threads have to be separated to to allow it to pass between them. omos ta betsurak animos et i to rest rol on the bobbin can never be entirely run out the bobbin in the shuttle; secondly, the waste of meterial because the full amount of thread

eite sides of the fabric, the free end of each thread being, as it were, inclosed between the folded portion or bight of each adjacent parallel double thread forms the selvage upon the oppothreads in. By this method the bight of each gailla edt vel of gainaitaco thread, thus gainrusts of than as or the beries bar besies bacones eats to bae fauft ett sgard refrres si besuit tern out to bue esteougo edt nedt at that side of the loom and carries it back; of the shuttle seizes the end of another thread from one side and released. The opposite end double the width of the fabric. By means of a carrier, which reciprocates like an ordinary shuttle, one end of the thread is carried across s large exterior supply at each end of the lay, cutting this thread into lengths which are noon is the taking of the filling threads from The essential principle involved in the Hunt

thin so that the warp threads do not need to be separated to any very great extent to allow its passage, and the femdency to preak these threads The filling carrier or shuttle is extremely light, being made of sheet steel, land as it carries no bobbin, it can be made comparatively thread so that a complete selvage is formed.

rier is so much lighter than the ordinary shutbe saved in weaving the peculiar goods termed basket and other similar goods. A great sav-ing of power is effected because the filling carcerrier at each movement, and much time can ap with one of the ordinary construction. Any aumber of threads can be laid in by the filling looms, where his whole time would be taken The saving in time is so great that one oper-broad rund teasi ts of bnests visas nen rota

tle that comparatively little power is necessary to operate it and a single of the power is a second of the second epsee and technical description for an ordinary article, but the general operation can be well understood from the above, and the engraving.



THE HUNT AUTOMATIC LOOM.

formed by uniting the threads of an indefinite the usual loss of several yards of filling yarn on number of small bobbins, thus forming a continuous supply to last for the day. The end of ing, the supply being on large reels outside the

gold-mining in this State, where it now ranks among the safest pursuits in which our people ain only just to serly dispelled in California it is only just to say; hence the satisfactory results that have of less so generally attended and the sooner the better. That this illusion of abuse, just because they are of a more pre-cious kind. The minds of the investing and mining public must be disabused of this error, waste, and hence these are earefully guarded against. But in mining for these other metals it is thought the business can stand every manner to dremeganameim to innome tasts yas baste ing these grosser products from nature will not known at the start that the business of rec eause the deposits of these useful metals are exploited on such different (principles, It is former than in the latter; and this mainly bethe precious metals any more than in mining for loss, so poper, food or iron and yet have the more frequent have failures been in the Why should a man go it blind in mining for

gold mining is engaged in and carried on just as farming and manufacturing are, then will failures be as few in this as in these other

loss have occurred in mining, it has been due to a non-observance of this rule, so sensible in

nowners a cover near or which to pur money that the that the that the that the that is success to call forming and the that is by all prudent amount and kind of care that is by all prudent and sagacious men considered indispensable in every other pursuit. It disappointment and every other pursuit.

nowhere a better field in which to put money There opens among the industries of the world

of this olses of investors. But this we will say to to benefit of those who may have money to invest in the line of legitimate enterprise:

Where men are going to chance it they may as well gamble in one as the other. We will not undertake to write for the good or the guidance of this olass of investors. But this we will say

tive purposes, then those embarking in it may, of course, just as well gamble in cotton, wheat, oil, or railroad stocks, as in mining shares.

the half of doing a fact that we have stime of and a good to a character a fact of the paper.

better in these ventures than they have been in other branches of business, they would fare men resident in mining countries, or even ad-here to the rules commonly observed in most

the methods adopted by practical miners as egegns of besogeib ere odw beorde elqoeq H resta vgoo bluow revies bna blog 101 gninim ni

How to Make Gold Mining Safe.

fice is at room 14, No. 217 Sansome street,

matio Loom Co., of which N. W. Spaulding is president and J. B. Reinstein, scoretary. Tho

Fremont street nest Market, where it is set so as to be operated at any time. It is the prop-erty of a corporation called the Hunt Auto-

mechanical details in this loom, which must be seen to be appreciated. Those interested may examine the loom at the Spaulding Saw Works,

There are several minor improvements of

VOLUMB LV.

itself, and of such universal application,

branches of business.

year and \$2,400,000 in all. The cash balance on July let was \$139,900, against \$81,000 on the let of Japusry. from 25 cents to 40 cents per share, payable August 5th. This will make \$215,000 paid this bashivib sti besseroni and robamA lo yang THE Plymouth Consolidated Mining Com-

cur at any time, the loom, provided with auto-matic mechanism for this purpose, will stop, and call the attention of the weaver to the a minimum. Should a breakage of threads ocger of breake from this source is reduced to hight of this opening, in this loom the danof noitroqorq ni beniarta gnied abserdt qraw as itin gaiveew to guittimbs, digid doni as The secured of the second of the farmes. The pasage of the shuttle of 6 to 7 inches and more, while this thread carrier is only five-cighths of ing an opening between the threads for the -tatiesecon ,esofoni fl ot ff lo hight egarova na that on the present looms the shuttles are of

obvious, when it is taken into consideration

The reason why there are not so many break-ages of warp threads on the "Hunt Loom" is

machine itself. The thread carrier takes what is needed at each atroke. A loom can therefore ran all day, without stopping provided that

8. P Photogramme Co.

e of the filling or warp threads break.

not shown in detail, as it would take too much | mending of the broken thread, The various devices and mechanisms which are noitavego eat two varies of beyoldme era take place by this method of weaving. filling will be the exact lengths needed at each operation, and that no weate of material will

It will be seen from this construction that the

The measuring and cutting of the filling yarn area adjustable to the width of the fabric woven.

binds the selvage on each side in the same way.

the loom. The carrier on its return passages

selvage at the other, this operation being re-

across as before, thus leaving its two ends at one side of the fabric and its middle binding the

seized by the carrier on its return and taken

side, enough more of this thread is measured of and cut and the end held in position to be

and the carrier is coming from the opposite

taken by the carrier, and laid across the web; and while this is being beaten into the fabric,

a supply is placed in the feeder, whence it is

needed. The thread or filling yarns are placed at each end of the loom in large supplies,

the lay designed to sever the thread at the proper time, and to hold and present the ends thus severed successively to the carrier when

The feeder is a device placed at each end of

and to seize a new one from the opposite

bial taut and it baends oft gorb of emit requiq

at opposite ends which seize the threads as above described, and by means of an auto-unatic mechanism, these jaws ave opened at the

swai to areggin dilw belivorq si reirreo edT

is thus greatly diminished, which makes a con-

emit ai gaives eldarebi

ted at the same time from the other end of

vant of the railroad was a united effort to second and the televorial types of applying the Concast where a special purposes, and the special purposes and the special purposes and the special purposes, and the special purposes and the special purposes

Water Supply for San Diego

and general agricultural value was hardly auspected. The object value was the restrict at the coler, and to the coler of the case of the case of communication with other portions of communication with other portions of the state of communication with other portions of the state of communications with other portions of the state of communications of poster where the control of the communication of the case of th

The chief reason of this lack of knowl-Twenty years ago all Southern California was looked upon as a barren desert, fit only for stock ranges and of but little value foreing that. Its wonderful capacity for fruit-growing and general agricultural value was hardly suspected. The ohief reason of this lack of knowl-pected. The ohief reason of this lack of knowl-

San Diego County and City.

[NO. 6.—CONTINUED.]

Southern California.

We admit, unindorsed, opinions of correspondents.—Eds.

**CORRESPONDENCE.** 

Of the county, or, as it has sometimes been the county, or, as it has seen the county in the desert division, lies each of the desert facinic railroad passes through The Southern Pacific railroad passes through this section, within which is the famous desert vation as depone on the ingress degree of cultilabel population of the county.

The Middle Division of the county.

The Middle Division of the county.

Lying between the two ranges of mountains all idea to, comprises numerous broad and fertile laded to, comprises numerous broad and improved pastures of mountains of the county as are low being rapidly taken up and improved as arable lands, and in some of them thirting as arable lands, and in some of them thirting towars and improved as arable lands, and in some of them thirting as arable lands, and in some of them thirting as arable lands, and in some of them thirting as arable lands, and in some of them thirting as arable lands, and in some of and improved as arable lands in the transfer of these very indicated indes its which the California Southern alleys had every the capture of a barren desert, forever given that road was constructed, some four or five very to cattle and sheep, the most while the fact of the capture the same road as low weeke since the road was completed, scarces a house was to be season, or a cultivated field or garden. While passing vore the same road a few weeke since the capulation, the willages were passed devery few miles.

The hotels have been built for the accommodation of the nough the road was to be completed, scarce a house was to be corting and villages were passed every few miles, thou of traveliers and villages were passed every few miles, thou of traveliers and residents, fruits few miles the organisms and villages were passed every the miles. The actual was and residents, fruits few miles are in frungs with the trough which it winds its nountes the organisms and villages were passed every the miles.

The hotels have been built for the accommodation of the organisms and residents, windstrien the entering ward outlets and string to the county are essen all slong the prophlates and subjects in the county, or the land of every of the new passed every land of the county, or the land of the passed with the cape of the passed of the county.

The Third Division
The Third Division

strengthened by the further fact that much of the scale is and valley and the stable land of the county was broken into the stable land of the county was broken into the stable land of the county was broken into the stable land of the county was broken into the stable land of the county was broken into the stable land of the stable land. But the stable land is the stable land into the

Topography of the County.

Moreease in Population and Westler. Motwithstanding the disadvastages, in many points of view, nader which San Diego has been placed, it has nevertheless more than kepte even passes in the control of the propulation and wealth with the state in helpful of 1860 and 1885 show that in Dorth population and wealth than either Los San Diego has made a larger proportionate gain in both population and wealth than either Los Santa Barbars or Ventura, during the half. Santa Barbars or Ventura, during the half. too, decade between those dates; and that, too, along the more northern conties began with a larger capital in population, and were the estimates content in population, and were the estimates to lay saide the business of stock raising for cultivation of the soil and the building up of names centers.

Increase in Population and Wealth.

EDITORS TREES:—Several years ago I gave to the public a series of my tests in black Sand.

What coar me many montres of labor and montre theres;—Several years ago I gave to the public a series of my tests in black sands. The coarse of coin. I gave to the public for nothing, thereby to call attention to what in words of coin. I gave to the public for nothing, besset these of low wages might result in two public by the way of throwing more gold into public by the way of throwing more of these expension. The results of some of these can circulation. The results of some of these expension. The results of some of these expension. The results of some of these expension. The results of come of these can drived in the first short of the content of the coarse there has been to years more on less at the coarse there has been to years more on less that of the coarse there has been to year and the coarse there is a drift on were given to the coarse the black sand accompanying the cand accompanying the cand accompanying the cand accompanying the form \$50 to \$500 s ton. I have concentrated the latest the black sand accompanying the the wash, would prove a paying the wash, when properly concentrated, arguing sand all, and receive a failure, would have been a dividend in the black the black sand accide when the coarse and the cartain the sand strain in the the sailure and the cartain the the sailure and the cartain the black sand the proper \$10 to \$500 to \$500.

I do not doubt but the ton properly control of the same that the can be sail the sand the can a plenty of localities that produce are plenty of quartz that will go \$5 s ton. I they can be black as and acciding the properly of the sand the sail at the end are and many of the sail at the meters high, and from theirs are some 400 meters high, and from their samings a mag, ninear two of the plain and of the Medininear work of the plain and of the Medininear work of the plain and of the Medininear sections of the meters of the Medinine are known in the principal markets as clear white, veined and statusry. The seconding as its pproximates to the resident of the sercophagus, the white is the most common, and waries in color and fearines of or to the changing color. In the construction of the sercophagus, the white the white is the white the white is preferred because of its purity. For waristions of the sercophagus, the white this purpose the clear white is used, which is barder and color part of the serior of the preferred because of its purity. For waristions of temperature, of the night hing tint, of hard and compare to the interior of the form color, and without or the interior of the fering. The year of the white the interior of bind the form of the seconding, it is of a without walsed according to the discusses and regulatively of the veine. The extrary is the orated the interior of the white, it is incomes and is subject affect, the marked to be the marked coording to the discusses and is the oratiful, and the most sought affect, the marked belong the sight. The beautiful, and the most sought affect, the marked sought is subject of the stone equal and white, with a slight. If yellow tint, There is some of a sugar-colored to see the past of this direction is some of a sugar-colored to see the past of the color of the series is one conding to the series of this and the color of the series is one of a sugar-colored to the color of a sugar-colored the color of the series is one of a sugar-color of the color of the series is one of a sugar-color of the color of the series is one of a sugar-color of the color of the series is one of a sugar-color of the color of the series is one of a sugar-color of the color of the series is one of a sugar-color of the color of the series of the color of the seri

Topography of the Gounty.

Topography of the county is about 9,500.

Topography of the county is about 9,500.

Included in Mexican and Spanish grants, leaved in Mexican and Spanish grants, leave belance as public lands. It is is an ing all the belance as public lands. It is developed to the most belance as public and the searly all the least to condings, which are being rapidly displayed to the most being rapidly displayed to the most being rapidly displayed to the most being rapidly and the county the county, the chief party of the most being rapidly and the county the county the county the county the county of the most being rapidly desired, although the county three shorts are already occupied.

Two mountain ranges run prough the most being the county three shorts are all meeting the most being the most being the county three chores are all the county three shorts are all the county three shorts are all the county of the mountains and sea is about 80 to 40 miles in length, ranging from 50 to 40 miles are allowed by a strictly and results and strictly of rollings artifacts of solid in the several smaller streams either pass through it is now from it. Of course to minds its way in the streams are either quite or nearly dry in the streams are streams below these points may be all the beauty and whatever eacepes or finds its way be into those streams below these solid way be in the first of the first streams and now comprises fully three shorts may be county.

The Middle Division of the county.

In the county is a surple of cultivation of the county.

Has been known to the Bar Barborine, and she upper portion of the San Gabriel, and she nown to the world for centuries, and San Diego Bay and Harbor worth the name in Galifey of the tast bundred years. It is the only the barbor worth the name in Galife principles of its extent and commerce in the possibilities of its extent and commerce in regard to lasted a system of continents I reliable to the great of the great system of continents I reliable to the great of the great system of continents I reliable to the great of the great of the world in the great of the great of the world in the great of the state of the great of the world in the great of the will sent of the state The Wealth in Black Sand.

Are people who possess great powers of endurance and the shore.

Are people who possess great powers of enduration the mountains, and have to traverse 5, 5 and 40 february their ascent to the mountains, and have to traverse 5, 5 and awen to their ascent in the mountains, and their scent at midday. Their day's work being then the fabruary their states of a burning sun in returning home. The weekly, Mot being economical, a great part of their small pay is apent for liquor and in the lottery, and they subsist on poor tood, whose their small pay is apent for liquor and in the lottery, and they subsist on poor tood, whose of mountains they are subsist on the direction of an overseer, who arranges with the master of the quality. They form graps under the direction of an overseer, who arranges with the master of the quality of the extraction of the master of the mountains. After the company of the mountains. The extraction of the market of Carrara is worth seeing. It is dead graps and the station are alley as and issues that are after the factor is the stone. On Sundays the plaze on the borers, they are rolled into the valley and the countains. The extraction of the market of Carrara is worth seeing. It is the lot stone-cutters that are alley had such the countains.

The acting the stone of the worth seeing. It is full is stone daily wage of the dillering to the country, in pictureque dress. In this plaze there is a statue which it is said Michael An olders at day to the contiter 3 peeckse, in the borers, they contain the secure of laborens is, stone-cutters 3 peeckse, in the contine of the worth of the mountains.

The average daily wage of the mountains are all grades, from the secure of the mountains.

The average daily wage of the mountains are all grades, from the secure of the mountains.

The passes of laborens is, stone-cutter and mountains are all grades, from the secure.

The average of the word of the mountains repair the secure of the daily wage of the laborens are all grades, and who seer to the mountains a Earnest Service of Carrares, white most famous is the factor of Carrares, white Marble of Carrares, ries). Its population throughout the world. The name Carrares is derived from the Latin quarvaria (quarraria (duarraria) tables greater part of whom are occupied in the greater part of whom are occurioned in dialect, known as the Carrarese. Although in Carrares and stabbings being of frequent occurrence—and constructed at the level of the street, no part in the disputes of the natives. The street, and convenient to labor in, do not favor the archestof from and convenient to labor in, do not favor the archestof from the models of the works of soulpture. A soulpture of the works of soulptures where stabbings the color of structures where stone is sawed, the ofly, furnishes the motive power for a multitude of structures where stone is sawed, the ofly, furnishes the motive power for a substitute of structures where stone is sawed, the ofly, furnishes the motive power for a substitute of structures where stone is sawed, in the Academy there is a large onlection of the best of structures where stone is sawed, and the ofly, furnishes the motive power for a sawed, and the ofly, furnishes the motive of stone of the form the order and models and stracted from the strength of the world. If vessels at large only the posts of being made a good port, until now only a mole with a spend of structures, the boats are loaded. A railway who are the boat as the structures and structures of the world, a spandon of the posts of the structure of the world of season of structures, requiring an entire day from the quarry to the spend and one of the structure of the structures, and the boat are loaded. A railway of one of the the boat as the structures, and the pold to the order the old road in ox ares, re The Stone-Cutters

### White Marble of Carrara,

pesetas by the impost of ten centimes upon each cabic palm. The palm is 25 centimesters in length, and is the unit of measure employed by the stone-cutters of Italy. The entire cordillers of the Apennines abounds in deposits of marble, but the most famous is the in the vicinity of that oity 200,000 tons are appeared a value of 25,000,000 pesetas (peseta, 20 cents), from which the Italian Government obtains 500,000 which the Italian Government of the 25,000,000 The marble industry of Italy is one of considers, and erable importance. Its center is Carrara, and it is calculated that from the quarries situated

[Translated for the Parss from the Gaecta del Con-structor of Madrid by M. M. M.]

The Marbles of Italy.

above the great the percentage of the mentioned forms are almost identically the same as a fact working the total versions of dismonds by steps in the percentage of dismonds by the same and percentage of the pe

mines are worked with little or no profit,

In the Cape Choray, the buying and selling, of diamonds is requisted by statute, which provides that all the cape Choray, the buying and selling diamonds is requisted by statute, which provides wonds sold must be registered. It also provides for the severe punishment of persons found violent fine law and the existence of a large detection of the law and the existence of a large detection of the production of diamonds and the existence of a large detection of diamonds are of series as as a seale and the many opportunities offered for setseling. The white production of diamonds are not setseling. The white production of the production of the production of diamonds are well as the result of the winter passes of the production of the winter process of existences as well as the cape of the winter process of existences are made of the many etones. The existence are made of the many etones. The captod is swallowing the diamonds, and the searchers get away with many etones. The captod is swallowing the diamonds, and the many etones. The arithes, by whom stones are given to sell to the captod in the searchers get away with many etones. The natives, to whom stones are given to sell to the captod of the convicting them. Or the purpose of detecting and convicting them. Or the searches get away with a sell to the detecting and convicting them. Or the form of in the convicting them. On the purpose of detecting and convicting them. Or the purpose of detecting and convicting them. Or the form of intended by the Grands are made of "the wolden to the trong them of intended by the Grands are sellowed by the conservation of the whole production as it were, of the areas clever device as many of the security of the wooden-nutting but was successful in to a short selmands. It was a clever device as security in the security of the whole production, as it were, of the areas of or the selmands. The security of the wooden-nutting production of the will be seen of the security of the wooden-nutt

Illicit Diamond Buying.

River Digging at Barkley.

The cost of fact has been at all times very great. The cost of fact has been at all times very great. The boers bring the wood a distance of high has been and of leas that wo cords. Dio miles or more, and of leas that wo cords. The prices of wood and coal during 1885 were 100 pounds; Kameelthorn wood, 3s. 6d. per 100 pounds; Kameelthorn wood, 3s. 6d. per 100 pounds; Olive wood, 9s. per 100 pounds; Pipe included the cost of transport the fact of transport at a coal was a cost of transport at the relit of the search of the relit of the cost of transport at the relit of the search of the cost of transport at the relit of the cost of transport of the cost of transport of the cost en. Cost of Fuel. Belative Value of Diamonde from Varlous Belative Value of the World.

Parts of the World.

The average value per carts of the diamonds from IV to 30 shillings.

This imbelies is from IV to 30 shillings.

This imbelies the whole mass of cancers of the work. It will be noticed that the view stones from Bark. On the said higher the price per carts then the wise sold for a much higher the price per carts then the wise sold for a much higher the price per cart then the wise force. I have been toil by West sell for a much higher the price per cart then the wise force. I have been toil by diamond-merchants in London that the pervalent is the will as the pervalence of South African is a brilliant, and country, and that the best experts cannot tell it matters not the from Brezil or any other value be a brilliant is a brilliant, and the diamonds are each the diamond mail left Kimberley through the milliant work. The calism on the control of the sverage value was about £60,000.

The coach was guarded by a mounted secort of three men.

Coet of Fuel. white, which dazzles those not expert, but does not serve for sculpture. Statusty of the color and deteriorates and deteriorates repaidly. A beautiful variety said deteriorates are supply. A beautiful variety is found near Serravezza. It is whiter than the Olarrara, but the grain is not setup and the produce and perhaps not so well adapted to marble of a dark-plus tint, with veins between coulpture. Some quarres of Carrara produce marble of a dark-blue tint, with veins bridly distinguishable from the color of the ground. It is wery hard and is seldom nead. A marble, is wery hard and is seldom nead. A marble, is wery hard and is seldom nead. A marble, and the color of the ground with large, but more beautiful, is called Barravezza, and is of a pele changing ground with black veins. Sometimes the voirs in said with large of the fraid and hence the likelian near of '' Bardiglio drifto' or '' Florito di Serravezza,'' The Praonazzo marble is quarried near of '' Bardiglio drifto' or white to a goldon-trave and the color; the frame of the servezza,'' The Praonazzo marble is quarried brown, with purple veins and green spotes. It is often employed in forming equares in walls, in the color of speces. The [ио. 6-Соистивеи.] African Diamond Mining.

The river digging mentioned in the first part of this paper are still worked. The monthly of this paper are still worked. The monthly yield of dismonds is from 2500 to 3500 cerets, valued at £2 to £2 los. per ceret. The dismonds are to und in strate of gravel along the monds are to und in strate of gravel along the Vasl river. Shafts are sunk to the pay stratum, which is drifted and weahed. These mines are worked with little or no profit.

La found near the city of these name, the and produces a magnificent effect. The close tent to the city of these name, the and the close tent to the city of these name, the city of the Vieo Clodie. This perple and black wells. In Islay it is usually perple and black wells. The quarties which furnish cold by weight. The quarties which furnish the black and golden marble are in Portor and the cold by weight. The quarties which furnish the black and close the cold of the c

much Sessented by the gradual deterioration of the several deterioration of the several deterioration of the several deterioration of the defines.

There are the serior of the seddines.

Spakespeare in his narration of the loves of the outstained by the seddines.

Lomeo and Juliet, The tomb, and it is near the several deteriors of the loves of the loves of the constituent of the categories of the otty, and is constructed of the love the contract of the categories of the contract of the categories of the love the love has pales of the categories of the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the love the love the columns of the love the

Deserves the preference of concentration and the ball of the dust in a condition ready to reduce the stillings and the dust in a condition ready for abloridizing coasting. In wet concentration ready for abloridizing coasting. In wet concentration to concentration and do see a concentration of the stillings and there would be a considered erable loss of silver coloride and lead-mine, used in the stillings in the concentration would be most suit. In would give, however, the case wet concentration in all cases which, this case wet concentration in all cases which, and concentration in all cases which, and concentration in all cases which, and concentration in all cases which, the concentration in all cases which, and concentration in all cases which, the concentration in a concentration of the concentration of concentration of the concentration of concentrat

THE business of the Ingersoll Rock Drill Co. increases month by month. They have recently thrnished complète mining plants to'the Dallas, theories, and the Briar-field Coal Coal Co. of Briarfield, Alabams. They have also done some creditable work among the contractors on the line of the Canadian Pacific contractors on the line of the Canadian Pacific Islamay.

### (No be Continued.)

The modification of the Korting injector, which acts in this case as an ejector, and is attached to the vate to hearten the filtering in lixivistion, is known as "" the soid siphon pump." It is lead-lined, and provided with a platinam steam nozzle. Size No. I is to be need.

varnish. The Korting injector. Higher in repairs.

Pripes, Valives and Troughs.

Hard rubber is the best, and in the end the observest, material for all pipes, valves and cooks obseapest, material for all pipes, valves and cooks solutions. Lead is the next best material, Iron pipes may be protected by disping them to into asphaltum varnish. For sodium sulpringer may be protected by disping them bot into asphaltum varnish. For sodium sulproperly used. Troughs for conveying and distributing solutions are made of wood and distributing solutions are made of wood and apparent and on the sulpring solutions are made of wood and apparents.

The same applies to the sods-ash tanks,

There-Press and Funnes, of Sinch Types and Punned Johnson's, of Ister-press I recommend Johnson's, of Johnson's, of Johnson's and Johnson's of Johnson's and Johnson's of Sinch distance-rings and Johnson's patients are of cast iron and covered with a pard lead. The bress pump ordinarily sold bard lead. The bress pump ordinarily sold then the sold lead. The bress pump ordinarily sold the since press is too light and small, and the sump to the selling the sold too and small, and the sump to the stranger the solution from map of iron and lined with hard lead. The pump for raising the solution from map of iron and lined with lead, maximum quantity of solution circulated, so that the pump may not need to run continuously, and time may be left for repairs.

Pipes, Valves and Troughs.

Tanks for Southin Sulpinies and Solds ASN.
The teaks for the manufacture and the storage of the sodium sulphide solution are made of three-sixteenth inch boiler iron. The manufacturing-tank may be 6 feet bigh by 3 feet for bucks themeler. The dimensions of the storage-tanks are not essential; they should storage-tanks are not essential; they should baye a capacity of about 90 to 100 onlic feet.

The same applies to the soda-sah tanks.

pides.

Lixivistion, varies are constructed to the control of the

and the fittings peonits to the fittings to the fittings and fittings for conveying solutions, a filter-press for collecting precipitation of metals, fittings and for the precipitation of metals, pipes, injectors and pumpe for conveying solutions, a filter-press for collecting precipitates, from a refinery for the treatment of the sulphides.

LIXIVARIATIONAL SECTIONAL STATES SECTIONAL SE

mercial designations correspond with the more bor of meshes per linear inch.)

In reasting the ore, those furnees about a leaded in blooded in the deader of blooded in the deader of leaded of the deader.

The Stepeleidt furnees is known to give the most perfect remains aults in these response. In case the dust remains to mest remains and it is another than the proportion of allver extracted is not to coming the mesterial are also increased in proportion to the mesterial are also increased in proportion to the imperfection of its reasting when the the continue of the plant, the chemicals and solutions, this continues and the manipulations peoulist to the Hard.

# Lixiviation of Silver Ores.

The Dry System of Concentration

A Description of the Russell Process.

This treaties is the sequel of a paper on "Enasties is the sequel of a paper on "Enasties is the sequel of a paper on "Enasell's Improved Process for the Lixivish."

Chicago meeing, in May, 1884, and pubpage 47. The facts it presents are principally page 47. The facts it presents are principally final experience gained in various places where a complete understanding of this paper a percentage of the facts of the fact A Description of the Russell Process,"

the smooth was from the Kimberley mine the kimberley mine alone. Since 1883, the product of diamonth the factor of diamonth in the kimberley mine has fallen off, "while the products of the products of the kimberley mine has fallen off, while the products of the production of the other mines has increased. It is almost the the other mines has increased. It is almost on the past be annual production of \$15,000,000 worth of diamonds without any material fall in price. The annual production of the Kimberley mines of diamonds without any material fall in price. The annual production of the Kimberley mines of modern worth with greater depreciation for some time. The worth with greater deprecial There is no doubt but with greater deprecial worth wort

and not by deed-weight; M cubic peloxs making a ton. America is the principal market, In 1882 there was shipped to the United States and Canada 29,940 tone. During the same and Canada 29,940 tone. During France, year the suports to the Lagista and Carcanary import a great quantity of Italian marble. The sawed flags are exported public and tree of duty. The consequence is, that the price of auty. The consequence is, that the price of auty. The consequence is, that the price of sawed of principal sample is the price of sawed of principal sample in the consequence of the market the price of sawed of principal sample is the complete of sawed of principal sample in the consequence is, that the price of sawed of principal sample sample is the sample samp

### Cheap Cable Roads.

handsome cable cars. The cable feature has been given up and the obtain baor and to trace of the read instead of the and a quarter long, and was built last winter. kailure is that of the Park Avenue cable line, Brooklyn, New York, It was about a mile tastel adT assulish to redmun a shaw base While the people in the Erst recognise the San utility and general good features of the San Francisco cable roads, as a consequence, they bay bayes to wild. As a consequence, they bay have to build on the cheestest plan they could, tried to build on the cheestest plan they made and another of tailures. The heast

Late seutre will be said to case oable system, of course, whereas it was only a sort of mongres cable, built in a cheap way, on a previous experience here entirely ignored. It had a roper ladder cable—that is, two parallel ropes with cast links or bars between them. A sprocket being formed like a saw plate and projecting through the slot, so the offsets would pass between the links or bars of the rope. When the cast stopped the wheel revolved, and to start the car stopped the wheel revolved, and to start the car stopped the wheel revolved, and to start the car stopped the wheel revolved, and to start the car it was olamped and its rotation prevented, This failure will be laid to the cable ayatem,

They knought they would have a small chan-nel or tube for this system, as there would be no deep projecting grip, and thus asve expense of construction. But the tubes kept filling up, the construction, the facility the superrequired to drive it over what is used on our cable system in this city. It looks well enough in theory, but practically the idea is a failure. out in three months. Double the power was used with these systems are heavy and wear out quickly. The rope on the Brooklyn road wore is patented by Lafayette Foster. The ropes failure. The Easmussen system had only one rope, with bars on the side, with which a sprocket wheel was built in 1886, but had to be given up as a is much like the Resmussen-McNest, Chicago, which was tried on West Lake street, Chicago, trom Garfield Park to Fourth street. That road This plan is not new and not practical. It car it was clamped and its rotation prevented,

here, get their plans, pay the petent royalties and build properly. If they must experiment, they should at least try and find out what has been done before in the same direction. serving every requirement. When people staterimental stage and work steadily and well, were perfected here. They are long past the The San Francisco systems of soble roads and and she best in the world. They originated and also profits the statement of the the rope wore out quickly, the much power was a

### Mexican Smelting Works.

Mexico is crude in the extreme. the Sierra Mojada, Mexico, states that the present condition of the metallurgical art in Mr. Richard E. Chiem, in his paper before

all doors. No windows are allowed; a a gare melting works, the openings in the walls are In Fig. 1, showing plan and section of Mexican dense the description from Mr. Chiem's paper. serpenton. Figs. 1, 2 and 3 of the engravings will give some idea of the construction of smelt-furnaces, as well as the general plan of smelt-ing works in which they are used. W. Os conpart in apright furnaces (hornos castellanos), part in a sort of reverderatory furnace called The ores of the Sierra Mojada are all smelted,

the intraces.

products and give them a chance to separate bein front of the furnace to receive the molten some 60 to 70 centimeters above the floor of the casting room, and a sort of bench of a stone and dirt, with a rude basin in the center, is formed and ending at the tap-hole. The tap-hole is of the furnace has a slant forward, commencing from two to five centimeters below the tuyere centimeters above the tap-hole, and the bottom on each side. It is about 1.30 meter high from the mouth to the tap-hole. The single tuyere, about  $2\pm$  centimeters in diameter, is from 15 to 20 level, where the section is about 35 centimeters 40 centimeters on each side of the mouth, and tapere gradually from the mouth to the tuyere slways of approximately square section, about sort of a niche in an adobe wall, lined with re-fractory stone or even partially unlined. It is R et sonniut thariqu to ounlistes onron saT

operated, the lower fourth of the shaft or niche

fore going farther. When the furuace is to be

Hawthorne is very good. have a crushing soon. The mining outlook for mine, near Hawthorne, Nev. The mine will

Electric Power for Mill and Mine.

through the mining and manufacturing re-gions, not only for lighting, but for the very expect to see them in very extensive use that article we said: ". Dynamos can be made of any desirable size, ranging from a fraction of any hundreds, "We principles involved, and described the dynamos and motors invented by Prof. N. S. Keith. In mission of Power," in which we considered the had a leading article entitled " Electric Transcrushing machinery of the Phenix mine, in New Zealand. The Press of October 3, 1885, saful use of electricity for driving the In last week's issue of the Press, we noted

The recent successful experiments of the Tell-pherage Electric Railway Oo, in San Francisco, in running care by electricity, were made by the one of apparatus built by the San Francisco for India and Collective for the successful the control of the for India and Collective for the control of the for India and Collective for the control of the contr in continuous and successful use in running machinery in San Francisco, and the dynamos and motors therefor were made in this city. important one, purposes of power."

For several months electric power has been

dynamo and motors used, Tool Co. for Prof. Keith, the inventor of the

means of dividing and transmitting it to local-ities where desired, from cheap and attainable bas somin ai sen rot rowoot lo noithdirteib bas per 20 yanarang noban beschruug od ası elling milleo niaga ni seuresiq esta ow , sommurot eldenlev sidd ot rewoot lo asers lo noitesta eda lorellev sidd ot rewoot lo asers lo noitesta eda noissimenant edt tot suteragga nedw won

wheels run the dynamos which generate the amalgamating machinery, lighting, etc. Waterodesply among the mills, driving the crushing and dump pumping, hoisting, drilling, pulling of dump cars, hauling to mills, driving the crushing and cheap power may be distributed electrically and , selim farever so as a radius of several miles, power purposes, from distance, inaccessibility, etc., and mills and mines on the bills and in the otherwise undesirably located for mill and mine widely apart, and serve to yield each its pro-portion of the power expended upon the dynamo. For a practical example, take a water-power More than one electric motor, even up, to han-dreds, may be placed in connection with the electric wire, and in as many places, otten all purposes for which power is applicable chanical power, which may be need for any or which reconverts the electrical energy to me like the dynamo, but called an electric motor, on this wire may be located a machine precisely ried to any distance along a stationary wire or other electric conductor. At any distance away er, into electrical energy which may be oarfor short, "dynamos," are machines for the conversion of mechanical energy, like water-Dynamo-electric machines, commonly called,

gainim sti ai stewog-tetaw besunu yasm os ets eredy adoption in California where there are very small, and the saving in fuel which would otherwise be used is great. The impor-tance of this great advance cannot be overesti-When once established the running expenses power is desired. rank string ent ta bataou stotom printes wher

electricity; wires radiate therefrom and convey

mated. The matter has passed the stage of ex-periment and is in practical use, and we look

successful performance, showing that the system has long passed the experimental stage. electrical-power apparatus under guaranty of parties in this city are now willing to erect teries, but the rock-breakers and concentrators, as well as the hoists, pumps, etc. As will be seen by reference to our advertising columns, ery may be run by this system, not only the batelectric plant for a prominent California mine is being contracted for, and it is pretty certain that many others will follow. All the mill machinthat the electric system may be employed to ad-yantage. Already, we are informed, one large e or mill, and it is under such circumstances there is plenty of water, a somewhat different condition of things from what exists in some mining countries. But, of course, it is not everywhere that the water power is close by the In most of the mining regions of California

also shown quartz which will yield \$250 to bara is 528 miles from San Francisco, by way \$1000 per ton. This was from the Pamlico of Mewhall, and 110 miles from Los Angeles, Accompand to the railroad survey Santa Bar-

## Non-Mineral Lands.

The General has been so taken up, nevertheless. The General Land Commissioner has now made a ruling and instructed Registers and Receivers the accept no entry is required, except such and and avit is required, except such and are no entry or made on personal knowness. character. The law does not permit the takening up mineral lands and timber lands, but a locators and witnesses, as regards non-mineral The Register and Receiver of the Land Office at Denver, and probably other officials else-timbers, have been permitting pre-emption of timber lands on " information and belief" of the stores and substances as served.

the contrary, the land goes as non-mineral and is forever shut out of the prospecting field. or some one who knows of mineral, certifies to trnot. Of course, unless some interested party, trouble at all to find out whether they take no trouble at all to find out whether they are right plenty of timber without people trespassing on the mineral domain. People swear, " on infor-mation and belief," that there is no mineral district, taking it up as timber land. There is been done. It is stated that not long since some 70 people located on mineral land in the Denver mines in the ground at the same time, as has been done. It is stated that not long since some It will now not be so easy for people to take up large tracts of timber land and acquire the

be no objection to people taking up as much timber land as they want, but they have no right to do so when the land is mineral in going on yearly without power to stop it. It is hoped that this new raling of the Commissioner will prevent the custom. Of course there can growing less. Prospectors and miners see this should have been open for mineral locations, Each year the mineral land open for location is control of the Government, mineral lands which In this way there annually passes out of the

### Mechanica' Institute Fair.

These exhibitions of the Mechanics' Institute of skilled musicians has been engaged to give inventions and machinery in actual operation, and a complete display of the finished products of our California workshops. A grand orchestra exhibitors for space, and steam-power and water are furnished free. Engagements have been entered into with leading manufacturers which insure an unusual exhibition of notable hibition even more successful than the preceding ones is anticipated. No oharge is made The arrangements this year are such that an ex-The 22d industrial exhibition of the Mechanics' Institute will open on Thursday, Sept. 1st, and will close on Saturday evening, Oct 8th.

to be sent here. manufacturers. Several county exhibits are terior this year in addition to those from city making the necessary preparations. A large number of exhibits will be made from the intend to make exhibits should lose no time in The advantages and merits of inventions may be explained and the articles shown personally to the very people from whom castom is to be expected. The trustees of the exhibition have spared no efforts to make this fair the spared no efforts to make when the most necessful ever held here. Those who in the energy of the static factors are the static factors and the static factors are the static factors and the static factors are the static factors and the static factors are the static factors are the static factors and the static factors are the st lent opportunity to advertise all sorts of articles. erowds of visitores. Thousands of people from the interior annually visit this fair, as well as our own citizens. It therefore affords an excelegral beteatta bas rainqoq aeed ayawla evad

son. Platinum from Granite creek, B. C., Provincial Secretary's Department of British the president of the company, L. J. Bennett, Gold quarts, Carga Muchacha mine, from Wm. Sublette, Borickite from Usah, J. W. Hanquarries of the Buffalo Cement Works. balt, nickel, copper, silver, cadmium, man-ganese and iron, A fine selection of fos-sils, Eurypterus and Pterygotus, from the mens of rare minerals, including uranium, coadditions to the collection of the State Minng.
Bureau have been as tollows: Minety speci-THE MINING BUREAU COLLECTION.-Recent

was one ounce of fine gold. Were decomposed quartz; out of four ounces of rock Hawthorne, Mev., recently, your representa-tive was shown two phials of fine gold from HAWTHORUR, W. J. Freeman, our correspondent, writes us as follows: While at

> CIENTIFIC BRESS MINIME

DEWEY & CO., Publishers.

Office, 220 Market St., N. E. cgr. Front St., S. F.

Terms of Subscription.

Annual Subscription, §6., Wew cubscriptions will be declined without exast in access in all streaming to paid for at the rate of §3.00 ppr annum.

be paid for at the rate of §3.00 ppr annum.

I week I medical in the rate of paid of I week I mone. Is mos.

Entered at S. F. Post Office as second-class mail matter Our latest forms go to press on Thursday evening.

SCIENTIFIC PRESS PATENT ACENCY

Saturday Morning, July 30, 1887

### TABLE OF CONTENTS.

Swee, O'S. TRATIONS,—The Hunt Automatic Loom, LLGSTRATIONS,—The Hunt Automatic Loom, Mored Miner's Candlestick. 69 EDITORIALS.—The Hunt Automatic Loom; How to Malec Gold Mining Safe, GB. Fassing Events; Non-Mineral Lands; Mochanics' Institute Petir; Electric Fower for Mill and Mine; Cheap Cable: Roads; Maxican Emailing Works, GB. An Improved Mines's Candle-atick, GB.

proved Miner's Cardiestick, 68.

Misoral Miner's Cardiestick, 68.

Materib in Black Sand, 66.

Meath in Black Sand, 66.

Misoral Diamond Mining; Idxiviation of Silver Ores, 68.

WECHANIOAL PROCRESS.—Singular Action of High-Presents and Steel, Wite Wails hard. Repaid Work; Funching Beltang; Chiesi Handles, 200

SOLENTIFIC PROCRESS.—The Three Forces—
Physign Vies and Psychic; The Exhaustion of Petro

loum, 70.

BWGINDERING NOTES.—High Steam Pressures as Sea, 71.

BEGGIN, INVORMATION.—An Ingenious Test: Introproved Pecking Material; To Oleen Kitchen Tables: Advantages of Paper Poteles; To Oleen Kitchen Tables: Brussels Capper, Copper of War Engine of War; Fire Set by a Tin Pan; American Hardware, 71.

GOOD HEALTH.—Healthy vs. Anjunious Brain-Mangaland Mangaland Mangaland

MINING SUMMARY—From the various counties to california, Nevada, Artzona, Colorado, Idaho, Montro Strong, Coston, Colorado, Idaho, Montro California, Nevada, Assessa, Fancisco Stock Board, Nofices of Mectanes, Assessation

## Business Announcements,

Electric Dynamos—N. S. Keith.
Concentrators for Sale—H. W. Rice.

See Advertising Columns.

## Passing Events.

This will be the first of the kind in this counests of this State, has ordered an electric-power plant for a leading California mine. prominently identified with the mining inter-We are informed that a capitalist of this city,

Arizons. A six-toot ledge of \$200 ore has been found. The mine is said to be better than found and strike will work the strike of the strike will be strike will be strike the A rich strike has been made on the 600 level of the Emerald mine at Tombstone, try adapted to quartz-mill use.

of this city has gone to Washington to submit again attract attention to Tombetone, which has been under a cloud for some time.

A representative of the Union Iron Works

complete in every respect, contract for a Government vessel, are pre-pared to take others, their plant being very bids for the new cruisers and gunboats for the Government. These works having already one

blod ealst of letiges to get the first of properties which short as transmerter which short as the properties of the control o is g opened in the different counties, and it is daily in importance. Many mines are now be-Cold-quartz mining continues prosperous in this State, and is an industry which is growing

erage value of \$1.213 per ounce. The average to selver in 1886 was a fraction under \$1, for 59,016 ounces of silver, showing an avclusive, at \$91,497,058, of which \$66,448,143 was 16 years, say from 1871 to 1886, both years ingives the value of the bullion yield of Utah for A RECENT number of the Salt Lake Tribune

.8781 of 1781 ni 32.1\$ teniege

olay and well fettled with slag. The lowest point of the sump is at one side, where a suitcentimeters wide, which is lined with refractory high. Back of the fire-bridge we find a basin or sump, likewise about one meter long and 50 the inner end a fire-bridge about 30 centimeters an sah-pit below, from which it is separated by grate-bars of adobe or iron. The fire-box is vaulted over in hemispherical shape, and has at On opening the fire-door of a serpenton we find that it gives admission to a fire-box about one meter long and 50 centimeters wide, with

all-pervading adobe, with a stone lining to the inclined portion of the hearth and to part of the were an invention of his own. As will be seen by Fig. 3, they are reverberatory furnaces of a peculiar kind. They are built, of course, of the by the late Carlos Schurbardt. Probably they were an invention of his own. As will be seen alda Co. is made in the serpentons, which are said to have been introduced into Sierra Mojada One third of the lead produced by the Esmer-

sbout \$2.25 per carga, or \$15 (Mexican money)
per ton of 2000 pounds. ospable of turning out five to six tons of lead daily, would be only \$4000 (Mexican). The cost of suncling in the apright furnaces is entire cost and installation of the plant eight furnaces in condition for use, would probably be not over \$2500. The cost of the blowing plant would be about \$1500 more, so that stone, will work from 12 to 15 days, when it requires to be blown out for a thorough renova-tion. The whole cost of a smelting works, with

In Sierra Mojada, an upright furnace cere-fully lined with the best obtainable refractory nie, with a production of from 3300 to 3600 pounds of lead bullion,

Each upright furnace will smelt in 24 hours - 3xim evods edf 10 abnung 0000 of 0055 mort

"iron," and thrown away,

Very little matte is produced from these fur-naces, the ore smelted being almost pure car-bonate; and what little does come out is called

strong flame at the tap-hole. furnaces are run with a dark top, and with a pounds to 75 pounds of the mixture. The

pounds each, and about eight pounds of char-coal is added with each charge. The total con-sumption of charcoal amounts to about 25 FIG to segrade at ai awordt at everxim sidT 990.99 T00-00 069 v..., . ro.. IndoT

TOSP 991.149 991.149

urnaces at the Esmeralda works is as follows: resohed. The smelting mixture for the upright are gradually increased in size and mixed with to ore, until the furnated is Тре срагдея remelting furnaces is exhibited. a bar on through the biast turned gently on, and the soun from the small charge of slag and lead-soun from the heated up by a small charcoal or wood fire, without blast. When the whole structure has therefore, more charcoal is right furnaces. On beginning to work with a new or newly-lined furnace, the shaft is slowly does not differ greatly from that in other up-The operation of anitions in these turnsces

woled stotsrego ing as a chimney, gives light and air to the spout 75 centimeters square, which, besides actbrick-work, which ascends shout four meters and then terminates, leaving an aperture of we capped with a square, pyramidal dome of from these open tops into the common easting-chamber. The vertical walls of this apartment The two furnaces deliver smoke and fume

furnaces are built together, side by side. mouth, the feeder carrying the unsterials and fuel in a little tray and mounting up on the benoh just mentioned to throw them in, Two with adobes lated with clay, leaving the tap-hole, shout 5, centimeters, in diamater, The charging of the furnace is done at the open inced with refractory clay mixed with charcoal dust and well remmed. The bottom is made of the same material, and the fourth or open side of the atom is closed up from top to bottom bas aretemitnee Of to diqub a of tap gab at

tory stone. The hearth opens directly and with a point short.

The hearth opens directly and with a point short of the learth opens directly and with a point short of the learth door.

The hearth opens directly and with a point short of the learth floor.

The hearth opens directly and with a point short of the learth floor.

The hearth opens directly and with a point short of the learth floor.

The hearth opens directly and with a point short of the learth floor.

The hearth opens directly and with a point short of the learth floor.

The partial are added I wrobu of lithere and a point should be parent to Francisco.

The hearth opens directly and with a point short of the learth floor.

The partial floor.

The partial floor or the learth floor or the learth floor.

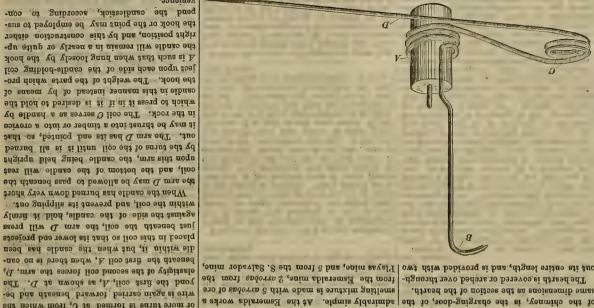
The partial floor or the learth floor or the learth floor.

The partial floor or the learth floor or the learth floor or the learth floor.

The partial floor or the learth floor or the learth floor or the learth floor or the learth floor.

The partial floor or the learth floor or the learnest floor or the learth floor or the learth floor or the learth floor or the learnest floor or the learnest floor or the learnest in the patent to Frank A. Hunter or the learnest floor or the learnest

JAMES' IMPROVED MINERS' CANDLESTICK.



same dimensions as the section of the hearth.

The hearth is covered or are hed over through.

The hearth is covered or are hed over through.

The hearth is and is provided with two Playsa mine, and 5 from the 8. Salvador mine, and is entire length, and is provided with two of the chimney, is the obarging door, of the samirably simple. At the Bameralda works a same dimensions as the section of the hearth. FIG. S.-SECTION OF SERPENTON FURNACE.

We give on this page a out, to may form of candlestick specially adapted for use by miners, the coil A is formed of one or more turns of

An Improved Miners' Candlestick.

This little implement has just been patented

right position, and by this construction either the hook or the point may be employed to sus-pend, the candlestick, seconding to con-

the candle will remain in a nearly or quite up-A is such that when hung loosely by the hook

osadle in this manner instead of by means of the hook. The weight of the parts which pro-ject upon each side of the candle-holding coil

which to press it in it is desired to hold the

in the rock; The coil C serves as a handle by bada og "bednied bne sti sad Mmra satt. "tuo es revice a cramit a contrar of year si de year of the satisfactor of the satisfac

toon, and the pottom of the candle will rest upon this arm, the candle being held upright by the turns of the coil until it is all burned

When the candle has burned down very short

within the coil, and prevent its slipping out.

or more turns is formed at C, from which the

sher points where it is desired to support the candle. From the lower end to the coil the wire extends backward, and another coil of one

upward and curved, as shown, so as to form a pointed hook, B, which may be hung upon a projection of rock within the mine or upon

wire, and is made of aufficient diameter to al-low s candle to be placed in it loosely. From the upper side of the coil the wire is darried

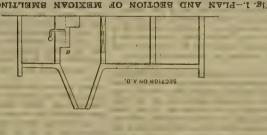
carbonates and galense, in enterprises where carbital is limited and more modern machinery the serpenton, its use of raw fuel (branches

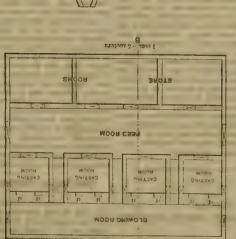
be far superior to the upright furnaces for pure and twigs of resinons wood, quick-burning and guiving a long flame, are the favorites), the comparative simplicity of its operation and the absence of expense for blast, it seems as it the serve of expense for made mode durable, would be the favorite threates for mass. The dead building in serpentons is about \$2.24 per caryon, or \$14.99 per ton, exactly the same as the cost of smelting in upright furnaces. Considering the cheap construction of nations of the cheap construction of the constru per day, with a daily production of 10 chrons of

mous. Their working time does not sverage over six days, during which time one furnace smelts about 20 cargas of ore with its mixture oto cost and lavo as to state succession of the cost o after obserging, the sump is fully in melted of the dead, and you which floates a highly beste slag, only on top of which floates a highly beste slag, only made fusible by the large quantity of light sea 55 per cent, which it contains. The lead is run off from the sump from time to time into a beat of the furnasels and cools the ground at the side of the furnace, and cools into runde slabs of an oval abane. The cost of fresh ore being charged as above whenever deemed necessary, and the former charge being moved downward natil, in three or four hours These operations are repeated in succession,

the action of heat. oharge is stimmed, so to speak, the orner being the orner be mored downward on the hearth toward the form of the capacity while the oneter porters are abled, so as to be better exposed to the capacity of th soon formed, which make a slag with the small amount of silice present and form a cruet on top of the ove layer. This being the case, the Da starting to sincip, arror the longth the longth beared neaded any about the forest based out about the smelting of the hearth is charted with the action intrature, spread out in a layer from 5 to 10 contrate, the first action of the flames is to drive off the moistque, attention of the flames is to drive off the moistque, attention of the flames the ignition and bearing of eart which comes the ignition and the liberation of any lithrage are of contrated and lithrage are of carbonic soid, Metallic lead and lithrage are of carbonic soid, make a sake with the special security in the security of the On starting to emele, siter the formace has

the serpenton, each shovelful in the orangement of the orange electric mixed with four shovelful of the contract of the contra





MINING AND SOIENTIFIC: PRESS,

A writer in Home Knowledge discusses the problem of the exhaustion of petrolehm, the control of the exhaustion of our oil-fields in the exhaustion of our oil-fields in the following manner:

It can hardly be doubted, I fear, that the samply both of oil and gas has now been so largely drawn upon that within less than a corre of years earcely and with a first manner.

It is a proper to the first manner of the oil repeated to the correct of the control of the correct of

The Exhaustion of Petroleum.

SCIENTIFIC PROGRESS.

The Three Forces-Physical, Vital and

The Economies Effected by the New Amer-The Economies Effected by the New Amer-fean Inventor.

About 75 tons of tuel have been required hitherto to produce one ton of sodium; by the Cartent process not more than 25 tons are readers are probably well aware, in, as my readers are probably well aware, in the wear strain upon plant. It is calculated that a steel crucible will stand at least 200 operations, which would represent not more than a penny per pound of sodium produced. The wear and test of furnaces is calculated at one penny per pound of sodium produced. The wear and test of furnaces is calculated at one penny more, giving for these two items twopence per more, giving for these two items twopence per pound, as compared with two shillings under the old process. As I have already intimated, larger works are to be spected.

The Plant Employed by Mr. Cartner:
In the plant erected by Mr. Cartner in London he dispenses with unwrought from cylinders
and substitutes large cast-steel crucibles. Need
and substitutes large cast-steel crucibles. It is ay that the order to expel the they comples are first heated in order to
small furnace at a low temperature in order to
expel the bydrogen from the caustic alkali and
expel the bydrogen from the caustic alkali and
a larger furnace where the sodium is reduced
a larger furnace where the sodium is reduced
at a temperature of 850° Centigrade, whereas
the temperature of 850° Centigrade, whereas
the temperature of Sofo Centigrade, whereas
the temperature of Sofo Centigrade, whereas
the temperature of Sofo Centigrade, whereas

The Plant Employed by Mr. Cartner.

American Inventions in England.

presenting the other of a set of enable for the other of the other of the other of a set of enable of the other of a set of enable of the other of a set of enable for conforming the other of the other other other of the other other

In evidence in the producting was been controlled in the beautiful to the control of the control CHISEL HANDLES.—All carpenters know how acon the butt ends of obisel handles split when soon the butt ends to the blow of a mailet or barners. A remedy suggested by a Brooklyn man mor. A remedy suggested by a Brooklyn man roomsists simply of aswing or cutting off the roomside and of the bandle so as to make it flat, and attaching by a few nails on the top of it becomes similar to the heel of the boot. The two or thicknesses of leather will prevent all they expand and overlap the wood of the handle, they expand and overlap the wood of the handle, they streamly trimmed off around. IODINE, hitherto known in nature only in combination with other elements, is now found in a free state in the water of Woodhall Spa, near Lincolu, in England. The water is colored a decided brown by the iodine. PUNCHING BELITING.—In a recent treaties on belting we find the following: In purching a belting we find the following: In purch, the leuger diameter of the punch being purch, the league diameter of the punch being so as to cut off as little parallel with the belt, so as to cut off as little of the leather as possible. There should be in sech end, two in each row. A zigzag. In a three-inch belt there about the each row. A zigzag. In a three-inch belt there are bolds in the row nearest the end. A ten-inch belt should have seven holes, four of the belt than three-fourths of an inch, The edge of no hole should one nearer to the sain not, The edge of no hole should one parare to the and not nearer the end than seven-eighths of an inch, The second row should be at least an inch, The second row should be even and on wide holts these distances from the end three-fourths inches the one and three-fourths inches from the end three-fourths inches the one one wide holts these distances should be even a fittle greater. RAPID WORK.—Some idea of the extent to which mechanical ingenuity and efficiency have which mechanical ingenuity and efficiency have advanced may be had from the following states and entire a complete sowing machine in a minute, or of oli no mente.

More important the insulation of the states of less; 300 watches in a day, complete in all their appoint. It is possible to construct a locomotive fact that it is possible to construct a locomotive wheel, lever, valve and rod may be constructed from the metal to the excontion of them by the workman of rivet may be driven in the boiler, every tube in the tube-sheets, and, from the mach be driven in the boiler, every tube in the subped, ready rivet may be driven in the boller, every tube in the subpen, a locomotive may be turned out in the subpen, a locomotive may be turned out in the subpen, a locomotive may be turned out in the work of 100 horses. Without such to do the work of 100 horses. Without such to do the work of 100 horses. Without such machinery and the skilled labor to operate impossibility.

chine of foreign invention is introduced into this country without some improvement being at once made to it, while nearly, if not quite, all the inventions which have oresed the Atlantic eastward have remained just as they left the hands of the American inventor.

MECHANIGAL PROGRESS.

Singalar Action of High-Pressure Steam Geol and Steel.

to be considered by the considering the series of the summer of the considering to suggest the series of the considering the c

Paychic.

USEFUL INFORMATION.

before it, decided in tavor of the workman. It he does as a guiding principle that it is the conception in the perfocted machine, not the machine, not the machine, workmanning or skill employed in working it out, that constitutes the invention, and hence that the workman who suggested the and hence that he workman who suggested the idea is the lawful owner of the invention.

BEUSENIS CARPET.—Brussels carpeting, propet has a basis composed of warp and woof of
ethough these thread, in this warp shere are
ethough these threads of lines the threads
added to every two threads of lines the threads
added to every two threads of lines the threads
is to bind the worsted together, and it is not
for woolen of different colors. The use of lines
is to bind the worsted together, and it is not
for woolen of different colors. The woolen
threads are from time to time drawn up in
loops to form the figures; each row passes over
threads are from time to time drawn up in
loops to form the figures, each row passes over
years. A cheaper kind is made by printing the
figures and colors in the worsted instead of
here, which indicates a new use for that metal.

OOPPERED TIX.—Mtr. P. H. Laufmann, Pitts.
but,, is manufacturing copper-palsed abeet
steel, which indicates a new use for that metal.

The sheet is made of decarbonized abeet
manufactured at the Apollo Sheet Iron Mills.

The abeet is made of decarbonized abeet
is made of decarbonized abeet
tinned on one side, and in this condition, it is
electroplaked with copper on both sides and
electroplaked with copper on both sides and
electroplaked with coppers on both sides and
electroplaked with coppers on the sides and
electroplaked with coppers, it is
estiole for many purposes than solid sheet
copper.

Coathur Pipes with Cork.—Experiments have been made at Billancourt, France, with a have been made at Billancourt, France, with M. J. Bourdon. A layer of cork is first employed, abestos coming next, and finally, another layer of cork. The temperature inside the pipes was the outer and after 360 hours the temperature of the coating was found to have only risen to 35° C.—Industries.

nound be understood. It has a special bearange and the boddes and the broades and the broades and the broades and a secretary and be a catterne workers and the broades are streamed and the broades are a streamed and the broades are consecuenced. The broades are broades and the broades are consecuenced. The broades of the series of the series indications, or symptoms, of the series indications, or symptoms, of the series of the series are commonly irritability; then consist and the broades of the series of t

A New Evenue or War.—A cable dispatch to the New York world states that the German authorities have added a new machine to their military equipment. It is a combination of steam engine, electrical machine, and huge reflector. It can be run over any kind of ground, it will be used for the purpose of projecting a strong light in front of important works, so as to guard against surprise.

FRE SET BY A TIN PAN,—A new tin pan focused the rays of the hot sun on Thursday last, and the dwelling of J. M. Willard of Broccon, Mass., where the pan was set outside to dry, caught fire and was burnt to ashes.

AMERICAN HARDWARE.—The value of the hardware produced in the United States each year is now about \$60,000,000, and nearly half is in ade in Connectiont.

Willow Furnither is dest cleaned with boiling water made strong with ammonia and applied with a whisk-droom.

Common brick-work will sustain 800 pounds to the square inch before crushing, and weighs 112 pounds to the onbic loot.

dyng?

If may be sublime ideal, that of a highly educated people; but if it should happen that the realization of this beautiful dream of our the realization of the weak, it will scarcely contable and the national conscience to refloct that, the state the national conscience to refloct that, after all, "the survival of the fittest" is the later all, "the nature.—Loncet.

When the most of the course of the work.

When the most of the course of

for action, but the ultimate unit, so to say, so to say, so to a cotion, but the ultimate unit, so to so to the torce of mutrition, which is, as we now be the force of general are the torce of general are the treat its or steady the conservation to the same that the treat is a conservation. We have said that it is necessary this food supplied or placed within their normal force. We have said that it is necessary this food applied or placed within their necessary this should be understood. It has a special bearing on the question of brainwork in childhood and adolescence.

CANNED FRUITS,—The pack of canned fruits in California this year is expected to be 25 to 30 per cent more than in 1856.

Hor Warer to Relieve Thirsa.—It is a mistake to suppose that oold drinks are necessary to relieve thirst. Very cold drinks, as a mouth and stomech, and so create thirst. Excusion trule, increase the teverish condition of the perione ahows it to be a fact that bot drinks relieve thirst and stomech, and so create thirst. Exclision that the cold drinks is in an abnormally heated condition better and safer to be odd, which the free use of drinks below 60°—in tact, a higher temperature is to be preferred; to avoid the free nee of drinks below 60°—in will do well to try the advantages to be denived from not drinks instead of the advantages to be definited from the drinks instead of the advantages of adding gestion, instead of causing delining directions of the drinks also have the advantage of adding gestion, instead of causing debility of the stomech and bowels.

GOOD MEALTH,

Healthy vs. Injurious Brainwork.

in the second process of the position of the second process which, about the distribution of the second which is a green place that is a contract place which are described with a different place and the second place which are described with a second place which are described and the described which are described with a described and the described which are described with a described and the described which are described and the described which are described and the described which are described and the described in the described with the same packs may be laid on the described and the described with the same packs may be laid on the described with the same packs may be laid on the described with the same packs may be laid on the described with the same packs may be laid on the described with the same packs may be laid on the described with the same packs may be laid on the described with the same packs may be laid on the described with the same packs and the described with the described Then the suggestions are the sought in the suggestions and remains the suggestions of the suggestions are the suggestions of th

To CLEAM KITCHEN TABLES, wet a soft oloth, leaving plenty of water in it, then so throughling that water and it is then so throughling that water and will remain to make a state and will remain to make a table or surface you are scrubbing the grain of the wood, paying extra attention to all gray spots. Now rinse the cloth, wring the to rinse off, the dirty water is only out; if wiped off, the dirty water is only out; if wiped off, the dirty water is only out; if wiped off, the dirty water is only out; if wiped off, the dirty water is only out; if wiped off, the dirty water is only out; if wiped off, the dirty water is only water is and go over the surface spain. Sop up the sand y lather, but wringing the oloth dry and your cloth as a gone over the spain. Last of all, rub as the last of the soiled water and helps the wood to dry quickly, which is a great point in making to lathe off the soiled water and ellope the woods to dry quickly, which is a great point in making boards with water. Tables that have been neglected may be bleached by spreading on the main over right; the next day brush it of sent main over right; the next day brush it off and serious. The same paste may be laid on floors when spotted with grease.—Good Housekeping, when spotted with grease.—Good Housekeping, when spotted with grease.—Good Housekeping.

IMPROVED PACKING MATERIAL.—An already Trance—as new sticle, consisting of stycenetic in read wood," is reported in Trance—as new sticle, consisting of stycenety france—as new sticle, consisting of stycenety france—about 40 to 50 by cant less have fair some sear less than the materials generally used its some approve, and its bearstill appearance, finances, and extreme cleanses have brought it into graph some cleanses, and extreme cleanses, in the statement of the well adapted for the seas have brought it into graph some cleanses, in the metal to the material of the material of the metal of the definition of the sea metal for bedding, attended to resche the sea metal for bedding, attended to reshelp to the best material for bedding, attended to reshelp to the sea metal of the metal of the petal metal of the sea of such the styling. Attended to metal of the sea metal of the definition of the control of the sea of sheoring machines, and it has a continued to the states of the sea of the s

the control of the co is More Economical

High steam presente, especially for sea service, has been a growing question for the past (ew years, and is to-day, perhaps, the imporsion to find the sear topic of thought and discussion smong the authorities on steam. Up to date, as will be seen from the following valuable article on the subject, which we copy from The Engineer, of particularly limited either by construction of particularly limited either by construction of the seasons of seasons to be seen the state of the seasons of sea

High Steam Presentes at Sea.

ENGINEERING DOTES.

As leavestore Test.—In a large leadery one to stoke the workmen careleasly allow-workmen in his case of the workmen careleasly allow-workmen in his left eye. The man averted that his eye was a fellow-workmen in his left eye. The man averted that his eye was blinded by the blow, although a careful stamming to reveal an injury, there being not a scratch visible. He browght suit in the courts to compensation for the loss of half of his of his of the blow of the his of the stamming the titles to timed by the per content at member, and relused all offers of compensations. The day of the title to timed by the diense, examined the alleged injured member, and gave as his opinion that it was as good as the right eye, and proved it. And how do you cappose he did it? Why, simply by knowing the right eye heard a black and the one for the two words were written with the without the prepared a black on which a left eye consisting on it. This not be left with two different kiles one for the ord words were with the red card on which a read the writhe eye consisting of it. This he one or the the read the writhes on it is also and we are ordered to eard with the red glass. Then the read the writhe one for the read the writh the red glass. When the intention, and the one for the card, which he prefended was alkeed without the prefended was alkeed was ordered to which he prefended was alkeed was deep capered to be black surface of the eard, while the left eye, which he prefended was alkeed was ordered to one.

have been found again on a split of the vein, and no state of the vein, and no state of the vein, and no state of the vein and pumping works are now well under the north of the old banner, is now looking better than to the old banner, is now looking better than the Best and Belones north of the old Banner, is now looking better than the Best and Belones north of the old Banner, is now looking better than the Best and Belones north of the old Banner, is now looking better than the Best and Belones north of the old Banner, is now looking better than the Banner of the old Banner, is now looking well and belones north of the old Banner, is now looking well and belone north of the old Banner, is now looking well and belone north of the old Banner, is now looking well all looking well. The yield has been steadily proceeding the development of the claim for several than the sections are all looking well. The yield has been seem steadily years.

Volence (McNuity) at the end of the oid tunnel, and the time will be gone on with at once. "Wever before the the work of anking the balf and prospecing the first the work of anking the balf and prospecing of individual and the place of the county has acts as a soon as a county that were by the county that the first of the county that were by the county that were county that were the county that were the county that were the county that were the county which were county that were the county will be county that were concerned that were county to the Harmon group of mines, like the water that were that will the county to come as the first read that which the county for the county are the count were the first were the contract of the county to the county that were receding to come as the first read and well index way. I have never that will give for a direct that well the the water they will give them and the countered. They have recently come to a say is encountered. They have recently come to a carry that will give our as a soon as the first read only we can't that will give for mill the me, water they will give them and opportunity to handle exceedingly how grade ores to the county for the times which they are assured of finding when the times which they are assured of finding when the times which they are assured of finding when the times which they are assured of finding when the times we took as the first of the countered.

prosecuting the development of the claim for several prosecuting the development of the claim for several years.

Ban Diego.

22: 10. I. Bailey has commenced operations on the hotelope mine. They have subset and several mine. They have subset and several mine. They have subset of the selection of the selection of the subset of the subse

HILDRETH.—Fine Gold Mines, July 22; Dock Wines week from the well-known Hampton mine, and reports everything to the well-known hampton mine, and reports everything brospecing the well-known far for man far for the well-known far for the well-known far for man far for well-known far for man far for well-known far for man far for well-known far for mer for known far for well-known worked in the Crosmann custom mill, in the well-known far for mer for well-known far for well-known far for mer for well-known far for mer for mer for well-known far for mer for well-known far for mer for mer for well-known far for mer his mecon is extracting some very good fock from his mine.

Babaeta.

100.—Cor. Shazia Contror, July 23; P. Gibney is still sinking on his Arizona mine, and getting good over. This for mise to be a good property 5. Prince. 'The old shafts are being cieaned out, and Prince.' The old shafts are being cieaned out, and Mecens. Bell and MoConnell, of Anderson, have gulch, Messrs. Campbell and Boggs have leased to be seined by the state and the pool of or the paid, and have out everal tone of good one to be seined a bromising prospect near the head of Bogus gulch, Messrs. Campbell and Boggs have leased being on the series in the series and have out everal tone of good one. If P. Wrights, a state as it unning on Shitten and Mansanita of Walet is pretty dow, but the asseures all the most of the time. Bennett & Litten are Mansanita of Walet is pretty dow, but the asseures all the most of the time. Bennett & Litten are land parties have honed at the Continental. Oakland in the most of the time. Bennett & Litten are land parties have been more at the work this week.

Band parties have bronded the Warrior, and will have men at work this week.

have men at work this week.

Tribe Dave bonded the Red Warrior, and will have men at work this week.

Tribe Dave belowed the telege in to show the greesing on the Enterprise, and that, in a short of the tour the followed the ledge in for short so the followed the ledge in for short so the followed the ledge in for short the early being pushed toward; a shart now the company is working.

The pollowed the ledge in for short so the tour the run. In the toek improves as it is sunk on, and as the carbon so the tour the run. The pollowed the ledge in for short so tons of carbing should be a good one, About so tons of crushing should be a good one, About so tons of crushing should be a good one, About so tons of crushing should be a good one, About so tons of crushing should be a good one, About so tons of crushing should be a good one, About so tons of the run. The Dave should be a good one, About so tons of crushing should be a good one, About so tons of the mining should be a good one, About so tons of the mining property on Spring guide, owned by Phillips, Hensley returned the property on the good one, About so tons of the mining property on Spring guide, owned by Phillips, Hensley returned Tuesday way of curing the ledge which varies in the dump.

The Dave soon as they have claveloped the following the ledge which varies in the good the substitution to the core is good, soon the contraining the ledge which varies in the case it good, should be soon the following the ledge which varies in the substitution to be substituted to the crushing the ledge which varies in the case it good should be substituted to the substitution to be substituted to the substitution to the ore its good, and the substitution the substitution the substitution that the substitution of the ore its substitution that the substitution is substituted to the substitution that the substitution is substitution to the crushell severything is solven; but the substitution is substituted to the substitution in the substitution in the substitution in th

DARWIN MOTES.—Inyo Independent, July 23:
About so men are at work in the Defiance mine.
Mr. Reddy is employing more men as fast as miner are not be found. The mine, is developing better for the factor and the more men as fast as miners and better a short the more factor. This will be accessed the factor and the monetory mine. The about him a very large profit. "W. Richards and W. Calhins a very large profit." W. Richards and week ago he struck as one body from which they are coment of the more of the factor of the control of the more the could find in the better for make quite a stake out of their lease. Frank it men with him to Lookout. These were all the Firsgerald was in Darwin last week and took over the and the men with him to Lookout. These were all the getting out a lot of fine one. The Darwin last week and took confit on men with him to Lookout. These were all the getting out a lot of fine one. The Darwin last week and took condition. The Darwin last week and took condition. Ore is produced as fast as teams can be had quality, and leaves a large profit.

EASTMAN GULČH.—J. W. Blakemore, just from Eastman, says that everything is looking tevorable for the questic interest of that everything in from mill on the Venicia mine is running on very good ore, which is said to average \$65 to the ton in the Position which is said to average \$60 to the continue on the Camburets pay about \$800 to the ton; and the black sand \$800... Only one shift is at rock from the black sand \$800... In the blank shift will now but next month two shifts will be put on. Jas. Fisher has about too tons of good sold. The mill now has about so too tons of good short on the pay of th

ING A B'CIB"

IDAO.

quality, and leaves a large profit.

Genzaly Ridge. Avancrith, July 23;
The Delhi mine, on Grizsly Ridge, still continues to yield at the same rate it has for the past number of is being rapidly opened, and is found to be of much is being rapidly opened, and is found to be of much is being rapidly opened, and is found to be of much is being rapidly opened, and is found to be of much it being rapidly opened, and is found to be of much it being rapidly opened, and is found to be of much fine de not being rapidly opened, and is found to be on the best mines in the State, as well as the owner, which the unite of the deserment of the ore bady best mines in the State, and that of the deficience of addition to the wealth of the streatly increased if addition to the wealth of the streatly increased if additions to the wealth of the streat will engage the addition to the wealth of the streat being said that the streat streamly have a valuable of the streatly increased if additions to the wealth of the streat will be considered in the found of the country, and will make addition to the wealth of the streat will be careable of completed its new milling company has receased it addition to the wealth of the store the streatly increased if addition to the wealth of the store the streatly forming to milling to the store the store will be streatly the contains and the completed its new miles has greatly almaying the owners. The event for profited the camp of the shore of the store of the sto

MEANDY.

SAVACE.—On the Goolevel the west crosscut on SAVACE.—On the Goolevel the west crosscut on the fool of the set of the set of the been found necessary to retinder to feet, "It has drift trom No. 6 crosscut on this level has been acteded ts feet in the quartz body. The west drift from the shaft station was advanced as feet, and its from the shaft station was advanced as feet, and its from the shaft station was advanced as feet, and its drift from the top of the upparts (from the 800 drift from the 100 drift from the 800 drift from the 800 drift from the 800 drift from the 100 drift from the 800 drift from the 100 drift from the 800 drift from the 100 dri

Granville. —Clifton Clarion, July 23: Mr. John Higgins came in yesterdeay from an extended prospecting trip to Gray's peak, during which he prospecting trip to Gray's peak, during which he Granville camp Mr. Higgins found everybody in granville camp Mr. Higgins found everybody in group of partial cover the prospects of the district. At 25 tops of the class of eacond-class group of furst-class of and 75 tons of gecond-class is an exceedingly rich prospect, showing prorp in the croppings along its whole lebgth of 1500 feet in the croppings along its whole lebgth of 1500 feet in the croppings along its whole lebgth of 1500 feet in the croppings along its whole lebgth of 1500 feet in the cropping and which possets the largest ledge of the while in the cropping and the strength of the class of the camp. The strength of the cropping on the sverage, \$60, Mr. Higgins well of the depth attained the surface onsiders this, a most promising prospect. From this camp Mr. Higgins visited the latest surke, the company of the class o

ANOZIAA.

An Authmony Mine,—Sitote, State, July 122:
William Woolcock and Thomas Bray are working William Woolcock and Thomas Bray are working the The Wing wine in Star district for solutions of the ore monthly to San Francisco, and make good, wages, ast the business. Francisco, and make good, wages, ast the business. Squire Brown of Unionville.

Star District.

And the Thompson mill is running steadily and a large amount of ore its on hand. Scorpton,—Have finished repairing the main shaft, and the air pipe is now all placed in position. Kentrock—The usual amount of ore is being extracted and shipped. Out of the true of the commenced in the lower levels.

Stear District.

BEST AND BELCHER.—On the 800 level, good progress is being made in driving forward No. 4

ALTA.—The stonemasons will begin work next miltimed with work manifold to the experiment of the feepers of the fee

BALTIMORE.—The drift on the 950 level is out about 80 feet in vein material that shows some small shout out on the 400 level. The stonemassons will been work next.—ALTA.—The stonemasons will been work next.

Thing rests and the gop level, are still diffing session and more and more

rescored the footwall of the vein transfers, in the upOccident Net, —Work is, in progress, in the upraise to connect with the upper tunnel and the north
sterical dult. From this dult, se tons of ore has
been extracted. The trust prospecting work is being donce on the race levels.

OPHIR.—On the race level, the dult running west
from the bottom of winze flot, as was advanced at
from the bottom of winze flot. The stage level, continue the work of repairing and timbering the south
drift.

and we along to extend and on the smite.

HALE AND JORGEOSS.—On the 700 level the north drift has been extended as feet. In the south fairt on et this level, not bet soot feet in west crossent, east, have put in a switch and started a crossent, east, the peut in a switch and started a crossent to a started to feet morth of You, any as advanced 400 started. The peut is said to be seen, it, passed through started to be supplying your passed through the four th

SIERRA MEVADA.—On the Seo level, east crosscut No. s, started from the main north lateral deift
out No. s, started from the main north lateral deift
total length, as feet. The face is abowing supe of
clay mixed with porphyry.

BELCHER L.—The transl amount of ore to being oxtracted, and milied. A good, deal of prospecting
work is in progress. The body of ore now being
work is in progress. The body of ore now being
aby be found to extend into this mine.

HALE AND MORCROSS.—On the 70 level the

GOVLD AND CURRY.—On the vool evel the station of the country and to Court and relating the station is being enlistived and relimbered preparation progress is being made in the work of repairing and progress is being made in the work of repairing and progress is being made in the work of repairing and made in the work of repairing and MEXICAN AND UNION CON.—On the 1300 level, the joint Union and Mexican and the joint Union and Mexican ground. The joint Mexican and one of the consequence of the consequen

IowA.—The mill is doing better work since altertations have been made in it. A small test run has altone have been made in it. A small test run has results. The mine is showing well throughout. Superintendent Curtis left hast night for the Bay, to be absent about a week. The wince do feet west of the Sharon ress is making in the wince do feet west of the Sharon ress is making in the wince that is going down from the 30 to 60 to

Inter presently 1000.

ANDES,—Have 'opened 'the third station on the 350 level, and have cleaned our about 50 feet of bid 350 level, and have cleaned our about 50 feet of bid diff leading from 1. The drift was a feet-bed caved, but in a day or two the vein will be reached but in a day or two the vein will be good. On the ago level are still muning north from the west crosscut.

YELLOW JACKET.—The ore-producing sections are all looking well. The yield has been soo tones a day, but much less than that amount will now be extracted, owning to the rappd alling of the water in the Carson tivet, which prevents milling. Moout 25 miners were yesterday distited and laid off, and more prevently follow.

AROUND BANNER HILL.—Grass Valley Union, July 23: The old Benner mine, on the western face of Banner hill, and which at one time was worked on an extensive scale, is being reopened on the extensive scale, is being reopened on, the strength of encouraging discoveries that have been made. The pay-chuie which was lost is claimed to made. CON, CALIFORNIA AND VIRGINIA,—On the 1300 level west crosscut No. 2, from the south drift, and

smaller engine has been to Angels for repairs and returned.

ORE.—Mountain Democrad, July 22: Last week and been to do you was struck in the Melton molecular food of rich one was struck in the Melton maine, Gristly flat. For some time past indications maine, Gristly flat. For some time past indications and last week it was found. It consists of a two-food over upon the dump and in sight that the mill has one upon the dump and in sight that the mill has one upon the dump and in sight that the mill has one of sarred up, and the Melton. The Big Cawyon mine, or than a sight he may be made a strated up, and the Melton in the Melton one of the more supported that Melton. The Big Cawyon mine, or large and they are soon to be moved to be more operations of the Montextmas mine, Mashbar, and they are soon to be moved to have super dedoor operations of the Montextmas mine, Mashbar, and they are soon to be moved to the All Melton of the more of the most promising the State, Who where a cold his interest in have secured a share in one of the most promising claims in this country and State, Whe hear rich who claims in this country and State, Whe hear rich have secured a share in one of the most promising claims in this country and State, Whe hear rich have secured a share in one of the most promising claims in this country and State, Whe hear rich have secured a share in one of the most promising this claims works are to be put the desired who MugpHys.—\*Cor. Prospect, July 22: "One and entered work on the manuscreet with return soon and continuents to the best page and the manuscreet of continuents of the page week, July 22: "One opening up, and during the page week, but year, weight when the base been below trying to get week, but year, weight when the coor to the Scheep Ratube company, but a control of the company, and the company of the complement of the company of the complement in regard to their course of construction of mines of the company of the company of the complement in pockets and the fact that the company of the complement in pockets and the fact that the company of the complement in the color of second determined the company of the complement in the color of second of the company of the complement in the color of second of the complement in the color of the complement in the color of second of the complement in the color of second of the complement in the color of the color

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

CALIFORNIA.

TUNNEL!—Amador Lagor, July 83; W. Boxall fast bream was the Carobole mine. The tunnel of a control of a contr

MINING SUMMARY.

be Gray's peak. Here was found amonibar to trate on. It there is anything all the aurounding promising comp. Edge are of the Mote. Terminates that above's a face a body of ore as is in the arms taking the property of the state of the state

The shore is a second force in the cried of the condition of the condition

and west flow prosperity. These locations are anone of them over two miles distant, while the major joint as the range of a mile. The Lucan Gulcert—The Queen of the Hills is again booming in the working of the mine, and now flush the working of the mine, and now many well not be necessiasted for place.

Without Balleme 1 Secretary, July 23: Without the horse of the control of the con

St. Louis parties is under process of negotiation, and will undoubtedly be perfected, but as yet it has not been.

St. Louis Give where a sign of Mr. Harry Cassert of memorance the arrays of Mr. Harry Cassert of mines in that vicinity. The object of Mr. Gassert of the mines in that vicinity. The object of Mr. Gassert of the mines in that vicinity of the consequence of the mines in that vicinity of the consequence of the mines in that district, which, a many good judges were, only need as railroad to become a great mineral district, which a many good judges were, only need as railroad to become a great mineral district, which a many good judges were, only need a mineral district. The same of the mines and will leave for Cooke City to-montow. The surpersonal district which has been accessful in his edeavore, only the same pointing same that the condition of the mines parties, represented in Butte, on the Black Warrangement which has been cerebrated to the mines of the town of Cooke City. More of the mines the granted of the town of Cooke City. More of the mines of the form of Cooke City. More of the mines were located from two to four mines from the learned of operations in fine properties are located from two to four mines of the four work of the four work of the four work of the four which is a fine for the four which is the organity. It belongs to Helena parties, who, a many greated distinct it miles south of Elliston in Deer or is based entered hosting worked to well present working as maling scandy and the levels on the soo. On the sunfaces, who, one is based and it continues so to the bottom.

The parties, who has been conting to Gove, the assayer at Relena, who has been will attoo to stroper ton. At the bottom of the bast the low will continue the unit and the levels on the sasyer at the case will stoop to stop of the will be been worked by kiley Levins (force as soon as the standors are over in and the levels of the sasyer at the case of the bottom.

When conding to Gove, the assayer at Relena, who has be

The Major Borne, and authority, that the Major Borne, and authority, that the best of authority, that the test of authority, that the test proted sale of the Major Budd mine is not pased ported sale of the formation comes from the holder of the bond and the owners. The Major Budd is the period of the bond and the owners, The Major Budd is the period of the bond is almost expired. A sale to the period of the bond is almost expired. A sale to an author process of negotiation, and will undoubtedly be perfected, but as yet it has not been.

ANATHOM

THE STERLING, MARZ—Anta-Mountain, July 83:3. Mr. R. B. Wallsce, superintendent of the Sterling mine, reports favorable, progress on that Sterling mine, reports favorable, progress on that Sterling mine, reports favorable, progress on that sterling mine, reports favorable, progress and when Mr. Wallace went over a few days ago to commence operations he found about 140 feet of and when Mr. Wallace went over a few days ago to commence operations he found about 140 feet of and when Mr. Wallace went over a few days ago to print a morrow. The begiteh company which recently purchased the property has in contemplation the credit of 30 more stamps this season.

The Manda Marze Manda Mr. Manda Mr.

up mines that we know of, Rich Rock — Boise, Statesman, July 22: Mr. Cody, ear, 50, few producing to feet get got got and attack there are no feet got in the cody. There was no gold to be seen in the rock, John and Leabo.

There was no gold to be seen in the rock, Mr. H. F. There was no gold to be seen in the rock, Mr. H. E. The state has a seen of the rock, Mr. H. F. The state has a seen of the rock, which is a seen of the rock, which is going to get out a car.

I see going to get out a car. gain booming in the working of the mine, and now face the mine, and now face, another become Westinghouse engine is in place, another stoppege will not be accessizated for the mine. Regularly, so and 35 toos of ore are agreed to the Bellewas sampler, which will probably large. The Minner Moore, just series of the place in the Good of the sampler, which will probably lines the or bodies of the sampler, which will probably lines Minner Moore, just series of the sample of the sample of the yoo level shows about four the mine the West is soon to the sample of the yoo level shows about four the face of intra-class jugging ore, which means satisfacted. The state on the yoo level shows about four the face of the classifier of the west is the purined. The state of the west is the profit of the west is the profit of the west is the face has been the sample of the Meller. The state of the west is the north of the Relief's procestiffs and bis crew are provad of the Relief's procestiffs and bis crew are provad of the Relief's procestiffs and bis crew are provad of the Relief, is being superintended by Capt. Lusk, with Mr. May as superintended by Capt. Lusk, with Mr. May as a superintended by Capt. Lusk, with Mr. May as a superintended by Aleasts Miller, Soot to the Munie forgust, The Multinery will soon be placed in is probable machinery will soon be praced in its probable machinery will soon be praced in the mine, which will do much toward definite the lower levels, The Munie sand Luser, with the Regule Site of the lower levels, The Multines and Luser Regule for the lower levels, The Munie sand Lusers, which we have the Manie see the tane, it is probable machinery will soon be prosed to the lower levels, The Munie sand Lusers, Mr. Ashe of ore the past week which have shown in the white the whole in the mine, where he were of ore the past when the week the white the lower levels, The Manie sand Lusers, Mr. Ashe when the Manie of shour System with the Manie devels. The Manie sand Lusers, Mr. Ashe was a second the manie of t

SOCORRO MOTES.—Bulling, July 85. Work on gold in the Public Socorrow of the White Fan mine, on the Public Abolistic on the Public Socorrow of the White Fan mine, on the Public Societies of the State of the Public Societies of the Societies MENIONA, MENION OF THE VILLIAM STRONAMENTORY IN SOCIATION OF THE VILLIAM STRONAMENT OF THE VILLI

desirable smelting ore, and it a large body is opened up it will make mining very lively in that locality.

THE SALVANTIE MINE is going to get out a carroad of ore that will best fire recome of the Vankee Sit of the Cannon of the Wankee

DAHO.

restrate BASIM.—Elle Mountain Pilot, July Object into great oliveing Basin bas developed into great the locality where the locality where the locality mere and is apt to be the one to startle the property interpretation of the control and the control way with the Mountain of the control way in the control way and the control way in the control way was a second way to be control way

THE BUCKSKIN.—Challs. Messenger, July 23; Cal.
C. Clawson informs us that he has been placed in
charge of the Buckskin mining property, in Stanley
Basin, as general manager, and finler he will put a
few men at work at once to make preparations for
putting on a force of 12 or 15 hands some time next
month.

For more at work for one to make preparations for the month of the control of the complex by the properties of the most of the control of the

HEVIEW.—Salt Lake Tribrare, July 26: T week has been of the finest summer weather. July 26: T week has been of the finest summer weather. July 26: T worker of or out of the finest summer week that the first state of the metals and so wer. The ceipts of the metals and so sale of summer week end of the metals in this city or the week week can be previous the first summer s

HATU

worked under favorable cutcumentness and with indications of a large clean, the properties of Grainm. A Co. and Tabon, Tracations of a large clean, the Co. and Tabon, Tracations of a large clean, the Co. are working two
asserts with great access. They have so cot for the
funded with a gr. or or degre, which prospects ruch in
free gold detween walls. At the compares ruch in
free gold detween walls. At the compares of the
free gold detween walls. At the compares of the
free gold detween walls. At the compares of the
free gold detween walls. At the compares of the
free gold detween walls. At the compares
free gold are to the compares
free gold are the
free free free states out the caret, next came
free free free states output this easeon from these
placers of Tabor & Co., at Granice creek, next came
prospect for a large output this easeon from these
to observation of our informant, and the
prospect for a large output this easeon from the
cost the ledge as not less than to feet, wide and at
the ledge at a distance of 300 feet, At the widest
the ledge at a distance of 300 feet, At the widest
of the whole turnel gives an assay of 450 to the tou.
They are continuing the tumnel good leet, and crossof the whole turnel gives an assay of 450 to the tou.
They are continuing the tumnel good seets of the wides
they are continuing the tumnel and expect to strike
of the whole turnel gives an assay of 450 to the tou.
They are continuing the tumnel and expect to strike
they are continuing the tumnel and expect to strike
they are continuing the tumnel good up feet, which
they are continuing the tumnel and expect to strike
are a distance of a feet of the tou.
They are continuing the transfer of the conthey are deline out ore for a bipment.
They are a large out ore for a bipment.
They have a large quantity already sacked. It is ex-

ing the Working funder is in about 300 thee, cutlace.

(CAMP CROSSCUTS.—The new boisting engines are in the control of the Crescent mine have arrived, and will be put in the place soon. Jids for the Crescent mine have arrived, and will be put in the control of the control o

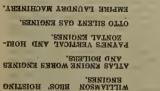
## GREGORY &

San Francisco, Cal.

Cor, Fremont and Mission Sts.,

## **YABNIHDAM**

SOLE AGENTS FOR



Korting intectors and elec-NATHAN AND DREYFUS OILERS PICKERING ENGINE GOVERNORS

H. W. JOHNS' ASBESTOS PACK TVNE VND BODEEK SVM MIETS. ING GO', RELLING VAD PACK DISCLON'S CIRCULAR SAWS.



PUMPS, PUPROVED STE BEMENT & SON'S MACHINISTS CHINISLS, LOOFS. NEW HAVEN MANUF. GCO.'S MA-REANK & CO.'S WOODWORKING J. A. PAY & CO.'S WOODWORKING MACHINERY.

STURTEVANT BLOWERS SERIN BYND SYM BLADES. MEBBER CENTRIFUGAL PUMPS.

BRADLEY CUSHIONED HAMMERS.

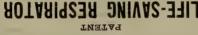
MASSEY'S STEAM HAMMERS.

MASSEY'S STEAM HAMMERS. LORBINE WATER WHEELS. BEVIEWED MILLING MACHINES SHIMER MATCHER HEADS. NEM LOKE

YACHT ENGINES. HOLLOWAY FIRE EXTINGUISH-

FROM 2 TO 100 H. P., ALWAYS IN STOCK

#### OIF2" LUBRICATING **QNA** MILL SUPPLIES



Entirely Prevents Lead Poisoning

and Salivation.

o most perior appliance for people engage elitary. The treathing, Gunno Wo sitiary, Dry Cruehing, Gunno Wo ickellyor Mines, Lees do Corroduler, Three treathing Meachines, and Stock-drylage, and all other coups, to shoot of the coups of the

to use season or \$50.00 per dozen. Sent post-paid to dozen es on recently be of price. didress communications and orders to JOHN TAYLOR & CO., Sole Agentes.

114 to 118 Pine St,

#### THE ROLLER ORE FEEDER



Clayton Air Compressor Works, And General Mining Machinery For CATALOGUES, ESTIMATES, Etc., Address

Practical Treatise on Hydraulic Mining. Office, 43 DEY ST., NEW YORK

This new and important book is on the use and and important book is on the use and important book is an interpretable and interpretable and interpretable and interpretable and interpretable and entors into the contraction of mines; record may diverge and entors, and a code as non set host of mines's inch, etc. A very practical map; diverge and entores; sellings are gold on the series of water. A very practical or sell of mines's and aneses of water. An entry practical or seale by Draway & Co., Publishers, 553 Market St., renciseo.

#### San Francisco Cordage Factory.

uc, etc., otc. Extra circe and longthe made to order on abort in TUBBS & GO. 611 and 613 Front St., San Francisc Betablished 1858.

Golden State and Miners' Iron Works, Sole Manufacturers, Ser Prest Street

And many others, and we are prepared to furnish either the

"OHALLENGE" IMPROVED ORE FEEDER,

Nos: 39 to 21 FREMONT STREET, SAN FRANCISCO, CAL.

**102HOA HENDY MACHINE WORKS** 

HOOKER & LAWRENCE, Gen'l Agents.

THE FRISBEE-LUCOP MILL CO.,

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh At 300 revolutions per minute will pulverize 2000 pounds wet.

All wearing parts easily and obeaply replaced. May be seen in operation at the New York Metallurgical Works, 104 and 106 Weahington St., and Pacific Iron Works, San Francisco.

Cortificates as to performance of the Mills, and any information required, furnished on Cortificates as to performance of the Mills, and any information required, furnished on Sanitestion.

ness in a rapid and economical manner.

other Mineral Substance to any degree of fine-

Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

-FOR WET OR DRY-

CENTRIFUGAL ROLLER

THE FRISBEE-LUCOP

Office, 145 Broadway, cor. Liberty St.,



The est form of Yeeder ever devised, and pronounced by reputable mining men to be far euperior to any form of "Roller" Feeder manufactured. We refer to the following gentlemen who have turnished us with teathonial letters to the above effect, which can be seen at our office, viz.:

N. W. CROCKER, Supt. Bunker Hill Gold Min. D. C. WICKHAM, Taylor Mine, Greenwood, Caling Gold Min. W. C. Roberers, Greenwood, El Dorado Co., Cal. ing Co., Amador City, Cal.

And will furnish descriptive Catalogues and copies of Testimonial Letters, and mill furnish descriptive prices upon application. "CHALLENGE," "STANFORD," "TULLOCK," or "ROLLER" FEEDERS,

## Metallurgy and Ores.

SWELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office. **COLD AND SILVER REFINERY** 

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, .... MAN UP AOT DRANGE OF ....

LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

CHEMICAL APPARATUS AND SUNDRIES, ETC.

114-118 Fine Street, - San Francisco,
We would call the attention of Assayers, Chemists.

ofton.

Our Gold and Silver Tables, showing the value per allow Golds of Silver Tables, showing the degrees of thorness, and valuable tor computation of assays in grains and grammes as each tree upon application. Agents for the factor bago Chuchlo Co, London, England Plates. The Saxuerov's Silver Plated Amalgam Plates. The saxuerov's Silver Plated Amalgam Plates. The computation of this well-frow manufacturer are thoroughly let, and full weight of Silver guaranteed. Orders at his lowest prices.

Nevada Metallurgical Works,

NO. 28 STEVENBON STREET, Near First and Market Streets, S. F.

Ores Sampled,

Assaying in all its Branches,
Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Flans and Specifications turnished for the

most suitable Process for Working Ores.
Special attention paid to Examinations of

Mines; Plans and Reports furnished,

G. A. LUCKHARDT & OO.,

(Formerly Hunn & Luckhardt, )

Mining Engineers and Metallurgists.

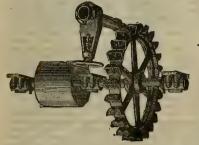
METALLURGICAL WORKS.
818 Fine St. (Basement.

Street, - SAN FRANCISCO

Assaylug and Analysis of Ores, Minerals and Waters. Mines Examined and Reported on. Practical Instruction given Treating Ores by improved two seases.

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED A by the latho Company & Chessas Valey, Gal., and strougher of chess Valey, Gal., and strougher one cane, distancing all competitors. Gend for the configuration of the configuration of the company of the com

This paper is printed with Ink Manufactured by Cheries Encu Johnson & Co., 500 South 10th St., Philadelphia. Branch Offices oce-47 Rose St., New York, and 40 La Salle St., Ohicego. Agent for the Pacific Cosst., Chicego. Agent for the Pacific Cosst.

## COLD MINERS

Quartz, Gravel and Placer Mines!

## Silver-Plated AMALGAMATING

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded.

Over 3000 Orders Filled.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Old Mining Plates Bought, Replated, or Gold Separated.

San Francisco Gold, Silver & Nickel Plating Works,

668 and 666 MISSION ST., SAN FRANCISCO, CAL.
E. G. DENNISTON, Proprietor.

STURTEVANT MILL.

SEND FOR CATALOGUE QUARTZ MILL. Hantington Centrifueal

ENCINES AND BOILERS.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES. SEND FOR CATALOGUE AND TESTIMONIALS.

PUMPING

**ENCINE2** 

CORNISH

HOIZLING

COBNISH BOFFS'

ENCINEZ

HALLIDIE'S

1165 and TROMMELS

MIKE ROPE

TRAMWAYS,

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

MEXICO OFFICE: No. 11 Oslie de Justez, Chibushus, Mexico.

NEW YORK OFFICE:
ROOM 48, No. 2 Well Street. GENEFEL OFFICE AND WORKS: Fulton and Union Streets, Unicago, III.

## Mining Turbine Water Wheel. JAMES LEFFEL'S

These Wheels are designed for all purposes where limited quantities of water and high heads are unliked, and are guaranteed to give more power with less water than any other wheel made, Being placed on horizontal abatt, the power is transmitted direct to abating by beits, dispensing with genting.

Estimates furnished on application for wheels specially built and adapted in capacity to suit any particular one.

Estimates furnished on a splication for wheels specially built and scapped in capacity to suit any or application of wheels specially built and scaped in each of this form of construction, as well as the ordinary vertical Turbines for Wooden Penstocks and in Iron Globs Cases, free of cost, by applying to the manufacturers.

JAMES LEFFEL & CO.,

Springfield, Ohio, Control or 110 Liberty St., New York.

FRASER & CHALMERS, General Agents, Obicago, Ill., and Denver, Col

PARKE & LAOY, General Agents, San Francisco, Cal.

## THOMAS PRICE'S ASSAY OFFICE,

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES, COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

Ores Received on Consignment, Sampled, Assayed, and Disposed

of in the Open Market to the Highest Bidder.

ASSAYERS, CHEMISTS, ETC. MINERALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

'SAMDA

WACHINERY,

ing smelting works

-basi ni noiteraqo ni al This Mill as a Crusher and Pul-verizer is without rival.

We have just compiled a very complete List of Recent and Senderd Works on the above subjects, which we had Senderd Works on the above subjects, which we had Senderd Works on the above subjects, which will be subjected to Books on Electro-Metallurgy, Also a New Cakalogue of Books on Electro-Metallurgy, Moling, Founding, Fattern-Making, and Metal Working, Wolden Senders, and our other Chalogues and circumsty he whole overling recept bench and Sendership of the chalogues and circumsty he whole overling recept panel of Selence applied to the Arts, sent free, and free of postage, to any one in any part of the world who will furnish his address.

Industrial Publishers, Booksellers, and Importers, HENRY CAREY BAIRD & CO.,

810 Walnut St., Philadelphia, Pa., U. S. A.

The Alien Act.

#### Inventors. List of U. S. Patents for Paoific Coast

Reported by Dewey & Co., Floneer Patent Solicitors for Pacific States.

From the official report of U. S. Fatents in Dawar & Co.'s Fatent Office Library, 220 Market St., S. F.

FOR WEEK ENDING JULY 19, 1887.

366,765.—Nut Lock—Cunningham & Peppin,
266,886.—Elt Brace—Gavin & Cromer, Eureka,
Nevada,
366,886.—Safeety Car—T, G. Gilfillan, Union,
Ureson.

Overon. 366,839.—Building Construction—P. H. Jack-son, S. F.

son, S. F.

366, 540.— SIDEWALK CONSTRUCTION — P. H.

366, 560.— PLOW— H. & G. [elinsky, Oakland,
366, 362.— OPERATING TABLE— Beni Marchall

F. F. Sels-Land Bracket—E. T. Naylor, S. F. J. Aleson, S. F. Aleson, S. F. J. Aleson, S. F. Selson, S. Selson,

ek, S. F., g., Two-Wheeled Vehicle—I, Sovergo, 986, 988.—Gas Stove Lip—W. H. Wiester, S. F. F., Got,—Teaderd, Call Candrey Can 366,795 -SAWMILL SET WORKS-Roe & Har-

T. (24.—TRADEMARK.—J. P. Smith, P. F., 24. C. T. Kort.—TRADEMARK.—J. P. Smith. Tai, 624.—TRADEMARK.—J. Smith. Faceniz tumples of U. S. and Foreign Faceniz tumpes of the foreign facenization and Scraege patents for felegraphic order). American and Scraege patents for the facenization and Scraege patents for facenization for the facenization of t to, 602. — TRADEMARK — Bristol Bay Canning Co.,

#### Motives of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Songwrite Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

Couverstream Operative American American Science Preserving Science Perspective Science Preserving Preserving Science Preserving Science Preserving Preserving Science Preserving Science Preserving Preserv

Louver.—Benjamin Marshall, S. F. No. 366,-783. Dated July 19, 1887, This is an operating table and lounge such as is used by physicians and surgeons in their prescrice. The patent covere certain new constructions and combina-tions of devices to form a partect denvertible biese of turniture.

Harback, assignors to Tatum & Howes, S.F. T. No. 366,795. Dated July 19, 1887. This covers ere certain improvements on a patent to A. E. Droe, The proved arrangement of mechanism, the means for regulating the amount of out in inches and fractional parts, and in certain details, of construction. SAWMILL SET WORK, -- A. E. Roe and D. L.

Constituents.—Esan T. Naylor, S. F. No. 36.83. Dated July 19, 1887. This invention

court, the many constant of the many of th

the lamp on the bracket.

Nur-Lock.—S. M. Cunningham and John B.,
Peppin, Ooyote, Sante Clera Co. No. 366,765,
Dated July 19, 1887. This peonliar nut-lock,
though it may be applied to the nuts of any
though it may be applied to the nuts of any
though it may be applied to the nuts of any
nee in locking the nuts which secure the boilt
need to fasten the foot plates connecting the
nused to fasten the foot plates. The lock can
he readily adjusted, and when in place will not
be affected by any jar.

Litting Jack.—Frederick (nint, Willowe,
Doluss Co. No. 366,792. Dated July 19, 1887.
This invention relates to that cless of lifting-

One of the control of

ERASEL,—W. H. Obstrander, S. E. No. 366, 791. Dated July 19, 1887. This invention are read of the defender of SLATE-PENCIL HOLDER, SHARPENER AND

MEETINGS TO BE HELD. COMPLEAD WART THE SHAPE ARE A FORE ENTRY OF THE SHAPE AND OTHER S. F. LOURENDE.

A SEESCHMEND STARY THE SHAPE AND A SEESCH THE STARY THE SHAPE AND OTHER S. F. LOURENDE.

BEELE SERVICE OF THE SHAPE AND A SEESCH THE SHAPE AND A SEE

MARKS OF COMPANY LOOMTON, SECRETARY, OFFICE IN S. W. ANNOW OF CANADA IN COMPANY LOOMTON, SECRETARY, OFFICE IN S. W. AND CANADA IN COMPANY C. W. W. HAVERS, S. W. O. Weynder, N. W. HAVERS, S. M. CO. Weynder, N. W. HAVERS, S. M. CO. Weynder, N. W. HAVERS, S. M. CO. Weynder, N. W. Chalfornie, T. Wekrel, M. Co. Californie, N. W. Chillomber, S. W. Company, C. W. Company, C. W. Company, M. Co. Californie, N. H. Clough, S. S. Montgomery St. Company, M. Co. Merchell, M. Co. W. Californie, N. Morrido, S. S. Montgomery St. S. M. Co. Californie, J. Morrido, S. S. Montgomery St. S. Montgomery St. S. Montgomery St. S. Montgomery St. S. S. S. S. Montgomery S LATEST DIVIDENDS—WITHIN THREE MOUTHS, LOANTION, SECRETARY, OFFICE IN S. P. AMOUNT.

#### S. F. Stock Exchange. It asks tendgill bas teewed to aldel

96" 03.3 00.2 27.3 04.4 £3 28.4 00.3 24.1 

#### Sales at San Francisco Stock Exchange.

	Samples	Дц	etnomil	umoj)	
26.4	Yellow Jacket.	210	\$0:Dg	Gould & Curry.	09%
67, I	Utah	099	9.8.9.3.8.8	Eureka Con.,	CZ 5
32.8	Union Con	100	0E.L	Exchequer	005
06.2	Seg. Belcher	20	ogg	Onledonia	100
o0&#</th><th>Syndicate</th><th>TOO</th><th>008</th><th>Con. Pacific, u.</th><th>300-</th></tr><tr><th>09.</th><th>Sierra Nevada.</th><th>120</th><th>£4"</th><th>Central Challence Conndence Con. Pacific</th><th>08</th></tr><tr><th>[w] [9]</th><th>Sava88</th><th>1250</th><th>03.2.</th><th>Challenge,</th><th>00E</th></tr><tr><th>507-</th><th>Scorpion</th><th>100</th><th>509</th><th>Central</th><th>55</th></tr><tr><th>30 S</th><th>PeerP99</th><th>100%</th><th>(83) 18</th><th>Сточи Роівь</th><th>300</th></tr><tr><th>34. I.</th><th>Peerless</th><th>400</th><th></th><th>Con Va & Cal.</th><th></th></tr><tr><th>29</th><th>Potosi</th><th>320</th><th>250053</th><th>ChollarTellodO</th><th>870</th></tr><tr><th>£800)8</th><th>Occidental,</th><th>100</th><th>07 I</th><th>Benton Con</th><th>100</th></tr><tr><th>08.16368.1.</th><th>Nev. Queen. N. Belle Is. Opbir. Overman.</th><th>0901</th><th>02.2</th><th>Bodie</th><th>002</th></tr><tr><th>87647</th><th>πίναΟ.</th><th>967</th><th>Or r</th><th>BallionBaltimore</th><th>09T</th></tr><tr><th>762046</th><th>N. Belle Is.</th><th>100</th><th>199)f9</th><th>Belcher</th><th>00%</th></tr><tr><th>49</th><th>мет. Опееп.</th><th>300</th><th>00.2</th><th>Bullion</th><th>929</th></tr><tr><th>00 8</th><th>Мехісац</th><th>200</th><th>89</th><th>B, & Belcher</th><th>210</th></tr><tr><th>17</th><th>Мехісан</th><th>970</th><th>504</th><th>Argenta</th><th>100</th></tr><tr><th>26<sup>V</sup></th><th>Lady Wash</th><th>1200</th><th>96 V</th><th>stlalA</th><th>00T</th></tr><tr><th>3<u>e</u>g</th><th>Julia</th><th>100</th><th>CE.I.</th><th>Andes</th><th>003</th></tr><tr><th>06 L</th><th>Justice</th><th>1050</th><th>01.2</th><th>Alta,</th><th>920</th></tr><tr><th>99 4</th><th>Hale & Mor</th><th>927</th><th>.7881 ,82</th><th>URSDAY July</th><th>2.15</th></tr></tbody></table>					

#### Thruman car & Sambres

Persons receiving this paper marked are requested to examine its contents, terms o .subquested to examine its contents, terms of sand give it their own patronage, and give it their of marking its value more widely forward, and making its value more widely known to others, and extending its inducence in the cause it faithfully serves. Subscription rate, 33 a year, fixits copies mailed for 10 cents, if ordered soon anough. If already a subscriber, please show the paper to others, an present in the serves.

Mechinery
Wagnor & Co.

Machinery
Ma

MINING SHAREHOLDERS, DIRECTORY, FOURTHS, STANDARD,

sad John and the another the stagnage at the Anten Andreas and the another the Andreas and the another and an another and a stagnage and a st A synopsis of an opinion by Attorney-General

money are used to develop the unines and not it of owners and not it of owners are used to develop the unines and not state of the last and theresat in real estate, and that does not supply to unites. The synopsis is more aliens may lawfully contract with American does not supply to unites. The synopsis is more owners to work the lawfully contract with the last as passed.

Territories and the District of Columbia. One section is as follows:

Territories and the District of Columbia. One of section is as follows:

The collection of the United States, or work the United States, or in the District of Columbia, or won real state or Territory of the United States, or in the District of Columbia, except and the District of Columbia, except the Collection of debt be received by inheritance or in the District of Columbia, except the collection of debts herefolded with the Collection of the District of Columbia, except the Collection of the best of the Collection of the corporation of the stock of who has one of the Collection of the collection of the collection of the collection of the stock of who has one of the Collection of the collect of the collection of the collect of the collection of the collect of the collection of aliens may lawfully contract with American money are used to develop the mines and not to obtain an interest in real estate, and that

#### Our Mineral Products.

The mineral products of this country are incrossing every year. Many Blood of this country are intion this year, were year. Mearly all the well-known
tion this year, and mean comparatively little,
thou this year, and mean comparatively little,
thou the bapartenent of Mineral State
reports of the Departenent of Mineral State
treat. S. Geological Survey, show that the
total value of mineral products increased in
total value of mineral products increased in
total value of mineral products increased in
the state of mineral products increased in
the state of the total value of the total
total state of the state of the state of the
total value of the total value of total proton, making a total gain of \$30,483,360 in this
the total value of the total value of total are
preciation of \$55,375 long total value of total are
the total value of the total value of total or prodecreased from \$51,600,000 in 1886 total
\$3,190,000 dotal 1885. The production of sulver
cloud of the production of oopper in 1886
to the production of oopper in 1886
to 10,000 and the production of oopper in 1886
to 10,284,526 pands from \$1,000,000 in 1886 in the production of sulver of the production of outles from 1885. The total producduction of ladd increased to 556,629 state in 1886
to 1885 the production of outles from 1886.

In 1885 the production of outles from 1886 in 1886 the production of quickeilver in California was 29,981
the total value shows an increase of \$30,81
the total producducton of dickeilver in California was 29,981
the United States. The total productor of lead was about \$1,535,035 abort tone.

This is the largest production ever resched in
the United States. The total production of of help are production of the program was 28,110,115 barrels and the work on the
sob, of the largest production ever resched in producthe United States. The substantial and in inthe United Production of the research of the substantial and induction of the largest production of the substantial and induction of the largest prod

#### New Incorporations.

The following companies have been incorporated, nd papers filed in the office of the Superior Court

The following companies have need necoporate and papers filed the file office of the collection of the other o

#### San Francisco Metal Market.

| 1000 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 WHOLESALE.

THURSDAY, July 25, 1887

THURSDAY, July 25, 1887

Solution of the control of the con

There has been some activity in the share market this week, and prices have been both up and down, with no very market carsed either way. The Virtual and the core of the control of the c Bullion Shipments.

Mining Share Market.

We quote shipments since our last, and shall be pleased to receive further reports;

pleased to feetive furfirst reports:

Argus, July 23, \$4538; Deerhardt-Monitor, 123, \$4505; Alice, 20, \$12,150; Soc. 41cot, 4205; Alice, 20, \$5506; Hanauer, 20, \$5506; Hanauer, 20, \$5506; Alice, 125, \$660; Alice, 20, \$13,347; Annual & Cot, \$13,947; Ann



#### ELECTRIC DEVELOPMENT COMPANY.

#### incandescent & Arc Electric Lights.

rerio Motors, Dynamos, Tramcars, Elevators, Signals and all kinds of Electrical Systems for lighting and sesson of power, either direct or with eftorage Batteries,

MOIMU EDISON INCANDESCENT LIGHT, For Mines, Hoisting Works, Mills, Reduction Works,

orking the whole 34 hours; invaluable to contractors and octacrs to whom

#### Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

## CALIFORNIA VIGORIT POWDER CO.,

: No. 40 California Street, San Francisco,

("DYNAMITE" or "GIANT") NILL BOOCT & CELLINE

## Blasting Powders.

LOH HEMODING STUMPS A Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal.

ED. G. LUKENS, Manager.

#### THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

CIVAL DOWDER OF DYNAMITE,

#### JUDSON POWDER IMPROVED,

YOUR EATLEOADS AND LAND CLEARING. Is from three to four times strongly pulsely and a money. It is as day as the ordinary Blasting Powder and runs as freely.

#### Bandmann, Nielsen & Co.,

GENERAL AGENTS, SAN FRANCISCO, CAL

#### S'.00 DEMEZ





ESTABLISHED 1863.

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agency. We have able and trustworthy Associates and Agency. We have able and trustworthy Associates and Agency we have the ingle and the capital cities of the principal nations of original cases in our office, we have borist, scientific and Patent Law Library, and record of original cases in our office, we have examination of Patent Law Library, and record of original cases in our office, and the frequent informations of Patente Law Library, and record of original cases in our office, we have examination of Patente Incompleted, for the purpose of determining the patentability of inventions brought before also are officed from the patentability of expense of applied to the patentability of the original productions brought before appoint or an office and the patentability of expense of applied to Tatenta apparitured from the patentability of the original productions brought before approached the patentability of the original productions which are not new. Circulars of advice sent free our receipt of patents appariture upon inventions which have not new. Circulars of advice sent free our receipt of patents appared to the patentability of the original productions which are not new. Circulars of advice and the patentability of the original patents are appared to the patentability of the patentab

**BEBLECT BOLL** ORO' H' STRONG

First Premium Awarded at Mechanics' Fair, 1884.

A MEET ME TO TO Solo Licensed Manufacturers of the

States of Cautoring, Uten and Artzont, and the Estongest, Ohsepost and Montens, Worlder, Strongest, Ohsepost and Montens, Lightest, Strongest, Ohsepost and Diest Balanced Pul-sy in the World. Also Manuacturers of Medart Patent Wrought Rim Pulley

SHAFTING, HANGERS AND APPURTENANCES

Testing and Working Silver Ores

#### The Techno-Chemical Receipt Book

NOW READY.

THE TECHNO-CHEMICAL RECEIPT BOOK—Consolated in the State of the Walling and the State of the Sta

HENRY CARRY BAIRD & CO., Industrial Publishers, Booksellers, and Importers, 810 Wainut St., Philadelphia, Pa., U. S. A.

MINCHEZLEB HONZE

44 Third Street, San Francisco, Cal.
This Five-proof Erick Euliding is centrally located, in
the healthiese part of the eley, only a part block from
the Craud and Pelace Hotels, and close to all Steamboat
and Railroad Offices.

Laundry Free for the use of Families

HOT AND COLD BATHS FREE.

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

J. POOLEY.

M. S. KEITH

Inventor and Manufacturer of

#### MOTORS, LAMPS Keith's Electric Dynamos

Storage Batteries.

Electric Reliways, and Apparatus for the Electric Transmission of Power;

Office, 40 Nevada Block,



Zinc, Copper or Bress Screens for all purposes. Cali. formia Perforating Screen Co., 146 & 147 Beale St., S. F.

Ul, our brand. If you want a good pair of Gloves, sak your merchant for

LEAK GLOVE MANUFACTURING CO.,

SAN FRANCISCO.

CONCENTRATORS FOR SALE.

Two Triumph Concentrators, in good order, oheap.

Nos. 129 & 131 Fremdnt Street, Apply to H. W. Rick, Es Huxome St. S. F.

The disacte are goes and discontinuous of the chicked of The disacte are goes and discontinuous of this class are well known, and result, pringipally, from the fact upon the body of the saing a single axis, may be lote, being mounted upon the body of the saing and a single axis, may be saing a single axis, as a saingle axis, as a saingle axis, as a saingle axis, as a conter about which to counter, being must be consected by the jorging of the brone, common niceted through the shafes, which, of course, a meaning a saingle axis, and the shafes lies the bronest and the saingle are the saingle are some of the bronest and the shafes lies the beautiful the shafes lies the beautiful the shafes lies the beautiful the shafes of which the transport of the bronest are the shafes are simply hinged to the frame of the shafes are of said consectucitions have been used comfort, one of said constructions bare been used monters, one of said constructions bare been used limiting and constructions by a flonged joint, and confort, and shafes and our being this joint by measure of the offer of said constructions bare by measure of the bender motion which is not communicities and controlling this joint by measure of the organicity of the body and the body and the body may have a motion of the organicity of the body and said the body and the body and said the body and said the body and said the body and said to the vehicle all tooken the being with out them then then independence of control with out and the may be and the body of the vehicle where the body and the body and the body and the body of the vehicle where their independences of content of contents of the body and the body of the vehicle where TWO-TWHEREND VEHICLE.—Josens Bookelege, 1986,798, Dated July 1986,798, The close of John 1986,798, The close of John 1986,798, The close of John 1986, The close of John 1986, The close of period, and the close of the close of

Co., Printers, 415 Market street, style and at low rates. CUBERY & do every class of printing in good based to make wood cuts, and to below First street. They are preation office, at 415 Market street, su ottice nearly opposite our publi-Cubery & Co., Printers, have public by printing circulars, cards, bring them to the attention of the from your inventions you must In order to derive any benefit

below First, San Francisco, Cal.

To Inventors.

estale eldevorent y teigent e viste, liw doidwe as bas, il gainsquaer for seam has, iloned as both side of the color of th

School for Girls and Young Ladies FIELD SEMINARY 1 OFFICE 460 Main Street, San Francisco, Cal.

Morris Beer Preserver Company.—Loca-ASSESSMENT NOTICE.

THE Partot Mining Company of Montans ids dividend of \$18,000 July 1st, second of

hould this paper he received by any subscriber who can dead it. It. A subscriber which conduct its risk he instruct to story the A care of continued, through will suffice. We will it, let him not fail to write us direct to story the Kovainty send the paper to any one who does not it, but if it is continued, through the lating of the sible party requested to stop it, we shall positively and paymentfor the time of the some tree.

Don't Eail to Write.

ISSE Telegraph Ave., Oakland, Ogl Address MES. R. G. KNOX, Proprietor, or MISS FRANCES A. DEAN, Principal, ATDe 16th year will begin Wednesday, Aug. 3, 1857,

San Francisco, Cal.

## Iron and Machine Works.

CALIFORNIA MACHINE WORKS, W. 118 Beals St., ... San Francisco.

Steam Engines, Flour Mill, ... Mining, Saw Mill and Dredging Machine Brodie Bock Gruebers.

Brodle Rock Orushers.

Steam Power, Hydrauluc,
Side Walk and Hand-Power
ELEVATORS.

Manulacturers of R. E. Henricson's Palent Automatic
Safety Octobes for Elevators. All kinds of machinery
mand paper of Elevators. All kinds of machinery
made and repaired.

SACRAMENTO, CAL. DNION IBON MOBES

Engines, Boilers, Steam ROOT, NEILSON & OO.,

MACHINERY FOR MINING PURPOSES. VED VIT HINDS OL

Sacramento, Oal. Front St., bet. M & O Sts., Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired.

-REMOVED TO-HALL'S BOILER WORKS

PRACTICAL BOILER MAKER J. V. HALLI, 804 and 806 Beale St., San Francisco, Oal

Smoke Stacks, Hydraulic Pipe, Oil or Water Tanks, Ore and Water Buckets, Gasometers, Girders, Bridge and fron Bip Bullding. All kinds of Sheet Iron Work. Re-pairing promptly attended to at lowest possible terms. Marine, Stationary & Portable Boilers.

Golden State & Miners Iron Works.

Manufacture from Castings and Machinery of all Einds at Greatly Reduced Bates.

Golden State Pressure Blowers. Anid-Board AMALGAMATORS,

First St., between Howard & Folsom, Sta

ENGEKA FOUNDRY THOMPSON BROTHERS,

ES and 181 Beale St., between Mission and Howard, S.F.

MANUPACTURERS OF CASTINGS OF STREET DESCRIP

Worke, No. 315 Mission St., San Francisco. Special attention given to Woodworking Machinery, team and Gas Engines. Correspondence solicited. Williams & Orton, MANUFRS OF GENERAL MACHINERY

MINING FAGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

MINING EXPERT AND GEOLOGIST.

ROSS E BROWNE,

NO. 307 SAXSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

American Exchange Hotel OT OD

per One door from & \$1.50 Coach. San Francisco, m Bank of Cal.

B.or. Firse of the Mursa and Soundary. Passe (un-bound) can be had for \$3 per volume of six months. Per year (two volumes) \$5. Inserted in Dewey's patent bind-er, 50 cents additional per volume. The above Hotel is situated in the midst of the Bank-ing and Commercial Houses of the city, and is by fat the most home-like and desirable Hotel to stop at, OHES. & WM. MONTGOMERY, Prop'rs.

> SHIPPING AND COMMISSION MERCHANTS, NEWHALL

Agents for Growers and Manufacturers. Chartests of Vessels for all Trades. Agents for Growers and Manufacturers. Chartests of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products. General Insurance Agents. Butope, Australia, India, Oshna and the principal states of the Feeling and the principal states feeling of the Feeling. Furnaments of the Company of the Mexican and the principal states feeling and the principal states and the principal states feeling and the principal states feeling and the principal states feeling and the principal states and the principal states feeling and the principal states and

General Agents for the Pacific Cosat of WATIONAL ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass

H. T. Scorr, Vice-Pres't and Treas.

Office, 216 Market St., S. F. Location of Works, Potrero. P. O. Box 2128

BULDERS OF -

Agents of the Cameron Steam Pump. STEAM. AIR. AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

VERTIOAL ENGINES, HORIZONTAL ENGINES, AUTOMATIC COT-OFF ENGINES, SHARFING.

TRY OUR MAKE, CHEAPEST AND BEST IN USE, Pans, Settlers, Retorts, Etc., Etc. PULLEYS, BABY Hoists, Veutilaling Paus, Rock Breakers, Self-Feeders, Putt-Feeders,

**NUION IBON MOBKS** 

HINOKLEY, SPIERS & HAYES, Proprietors. MOBKS IBON

[ESTABLISHED IN 1855.]

Office, 230 Fremont St., Son Francisco

MARINE ENGINES AND BOILERS. Stern or Side-wheel Engines.

MINING MACHINERY.—Hoisting Engines and Works, Cages, Ore Guckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

nshing, Amalgamating Pans, Settl re, Furnacce, Re-ts, Concentrators, Ore Feeders, Rock Breakers, Eur-res for Reducing Ores, Water Jackets, etc. MILL MACHINERY. - Batteries for Dry or Wet

Mill Machinety, Saw Mill Engines and Boilets, Dra Machinety, Powdet Mill Machinety, Water Wheels,

**MORKS ORE WET OR DRY.** Tustin's Pulverizer

ENGINES BOIL TOSTINS POLVERIZER.

Either for use on Steamboate or for use on Lan

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

OV. EVERT DESCRIPTION.

Boiler Repairs Promptdy attended to and at very moderate rates.

AGENTS FOR THE FACIFIC COAST VOR THE

AGENTS FOR THE

AGENTS FOR THE FACIFIC COAST VOR THE

AGENTS FOR THE

AGENTS FOR THE FACIFIC COAST VOR THE

AGENTS FOR THE FACIFIC CO

HENN JOHNE STEAM PUMP. Corlies Engines and Tustin Ore Pulverizers.

PACIFIC ROLLING MILL

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in atrength, toughness and durability to Gast or Wrought

Inon in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL, ALSO Steel Rods, from ‡ to 3 inch dismeter and Flets from I to 8 inch. Angles, Tees, Chennels and other sheel Wesch. Buggy, and Truck Thres, Plow Steel; Machinery and Special Shape Steel to size and length STELL HALLS from 12 to 45 pounds per yeard. ALSO, Telltoned and Marchine Bolis, Lag Screws, Inte, Washers, Ship and Desurs, Angle, Channel, and Truch Fletge and Marchine Bolis, Lag Screws, Inte, Washers, Ship and Bo Spikes; Steamboat Shafts, Crante, Pictons, Connecting Rods, etc. Car and Locomotive Axles and France and Locomotive Axles Axles and Locomotive Axles and Locomotive Axles Axl

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

WINING WEN NOTICE TO

ENGINEERS, CONTRACTORS,

and others interested in

TUNNELING, SHAFT-SINKING, ETC.

Engineers' Tables of Progress

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIOUS

NEM LOBK

Section 16x16 feet; Length 36 miles.

THIRD EDITION NOW READY.

For Catalogues, Estimates, Etc. address:

INCERSOLL ROCK DRILL CO.,

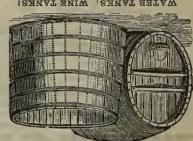
PARKE & LACY,

8 California St., and 21 Fremont St. EAN FRANCISCO, CAL.



THE H. H. H. Howes Liminant pure and the first of the fir

atelgaurb ila vd elas roff



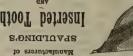
CALIFORNIA WINE COOPERAGE CO. WATER TANKS, WINE TANKS!

So to 40 Spear St., KULDA BROS., Proprietors,

AT SHIP, MINING, and WATER TANKS a Specialty. Tell VIT KINDS OF CASKS, TANKS, Etc.

N. W. SPAULDING

SAW COMPANY



Saws

CIRCOTY

CHISEL BIT



INVENTORS, TAKE NOTICE Ot all kinds made to order. Send for Descriptive Cata-logue. I'v and 19 Fremont St., San Francisco. GAW MILLS AND MACHINERY

L. PETERSON, MODEL MAKER,

268 Market St., M. E. cor. Front (up stairs), San Francisco. Experimental machinery and all kinds of metal, tip. copper and bress.

(\$212.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER ROO ARE NOW IN USE. Concentrations are clear from the first working. The west and teady to make tests at 220 Fremmer Street, San Francisco.

The Montana Chaires of your Proc Years Franchisco Chaires of your Panestra (Limited), Lowdow, Octsbor 8, 1885.

Dake Suzz :—Harburg tosted three of your Person years with other similar machines in machines for immediate delivery. Yours truly,

THE MONTANA COMPANY (Limited).

N. R.—Since the above was written the 50 Venners having been started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that add in the first started gave such astisfaction that the first started gave such as the fir

Protected by patents May 4, 1869; December 22, 1874, September 2, 1879; April 27, 1850; March 22, 1831; Febru-ary 20, 1835; September 18, 1883. Patents applied for.

Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,

THE FRUE ORE CONCENTRATOR

OR VANNING MACHINE.

STELL

## **\*(00'099\$**) FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the celebrated "Triumer" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their trames being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built as compactly as their requisite strength will permit, weigh less, regular less freight space in boxes, by which their cost of transportation is reduced, and occupy less mill room when set up, have notion which as the discharge from the deed and amalgam bow. The improvement is in the tectpropage in front to fand which as the discharge from the feed and smalgam bow. The improvement is in the tectpropage in front to fand which as the discharge from the feed and smalgam bow. The improvement is in the tectpropage in front to fand which stees the discharge from the feed and smalgam bow. The improvement is in the tectpropage of and which askers to be despited in front to the discharge from the feed and smalgam bow. The improvement is a firther recently been introduced into the factor of the smalgam bow. The improvement is in the testpropage of and which askers in the discharge from the discharge from which is improvement is in the feed of and which askers in the discharge from the discharge discharge discharges of a factor of the discharge from the discharge of the testpropage of the discharge of the discharge from of Concentrator, and we shall be of send Circulars covering such letters of satisfaction of the discenting of the discharge from the discenting versions for send discenting versions for send discenting such letters of sand considerable order.

JOSHUA HENDY MACHINE WORKS,

Mos. 39 to 51 Fremont St., "TRIUMPH" ORE CONCENTRATOR

FOL COLD SAVING

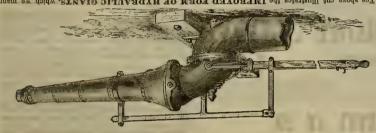
IN QUARTZ, GRAVEL, OR PLACER MINES. REST SOFT LAKE SUPERIOR COPPER

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES
FURNISHED ON APPLICATION. FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

SAN FRANCISCO NOVELTY AND PLATING WORKS

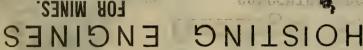
No. 108 FIRST STREET.

GIANTS. HYDRAULIC **FORM** IMPROVED 0E



he IMPROVED FORM OF HYDRAULIC GIANTS, which we manu-thiringements upon this form, and a judgment stands of record to that effect, under the U.S. Circuit Court in the matter of Hendy and Fisher vs. R. Hoskin et als, bullestion to

JOSHUA HENDY MACHINE WORKS, 38 to 51 Fremont St., San Francisco, Cal.



1, 2, or 4 Drums, with Reversible Link Motion or Pat. Improved Friction. Motion or Pat. Improved Friction.

HADEO-CYBBON VERVA FURNACES Agent for HOSKINS'

BATTERY SCREENS AND WINE CLOTH

521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

MOTICE.—All our plates are guaranteed to baye the full weight of silver agreed upon, and are tessled be-lore leaving our works, thereby avoiding the complaints about light weight, made so often before we started

San Francisco, Cal

SAN PRANCISCO, CAL

-MANUPACTURER OF Assayers' and Mining Material.

96 Liberty St., New York, LIDGERWOOD M'F'G COMPANY,

PARKE, LACY & CO. PACIFIC COAST AGENTS,

SAN FRANCISCO.

COAST. COAL MINES OF THE WESTERN

For Sale at Half Price,

Address J. H. TIBBITS, Astoria, N. Y., Long Island.

HYDBAULIC IMPROVED

MACHINE,

T DIFFERS FROM THE O.D STYLE IN HAVING ONLY ONE JOINT Instead of two. It is of greater capacity and more easily worked and kept in repair. The statement of Mr Hondy that distyles are intringed ments on the machiness made by him, he knows to be utkerty false. All itigration rate machiness made by him, he knows to be utkerty false. All itigration rate and the properties of the content of the content of the way the angular decision of Judge Sawyer, referred to by the tops of the content of the court, with absolute certainty of a reversal in our favor. Miners and incounty proposed to U. S. Supreme Court, with absolute certainty of a reversal in our favor. Miners and incounty proposed to U. S. Supreme Court, with absolute certainty of a reversal in our favor. Miners and incounty of the content of the court, with absolute certainty of a reversal in our favor. Miners and incomply and the content of the court of the content of the content of the court of the content of the content of the content of the content of the court of the content of the content of the content of the court of the content of the conte

## ENBERGER'S ROLLER ORE CRUSHER

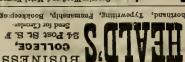
Crush 8 to 10 Tons per Day.

Shorthand, Typewriting, Penmanship, Bookkeeping.

Engraving Superior Wood and Metal Engrav-







A few copies of this work, the only one ever published intenting of Pacific Casas Co il Mining, nave been obtained and are for safe at his offic of 28.60 per copy. It wantithen by W. A. Goodysen, Mining and Offic Degineer formerly of the California State Goological Survey.

ORE CONCENTRATOR

PORTLAND, OREGON.

SAN FRANCISCO, CAL

SALT LAKE CITY, UTAH,



ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood Machinerv

L. B. MEAD, Secretary.

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY

DURABILITY,

.еви пі wоп темот ватоН 000,00 AND FACILITY OF INSPECTION and REPAIRS. ECONOMA

Boilers can de seen working in San Francisco at Palace Hotel, Spring Vailey Water Work Huster Bros. & Co., California Jute Mills, and other places.

WITSON'S PATENT GAS-PRODUCER,

**BOILER**, WATER TUBE

SOLE MANUFACTURERS for Pacific Coast of the Celebr

STEAM GENERATOR. A NEW AND RADICAL DEPARTURE IN

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY A SAVING IN FUEL DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

IRON CASTINGS of all descriptions.

MHEETS

San Francisco, Cal. PACIFIC IRON WORKS





CONCENTRATORS AND ORE CRUSHERS. Centrifugal Koller Guartz Mills,

Mining Machinery of Every Description,

SEND FOR CIRCULAR,

(ESTABLISHED 1855) Anti-Incrustation Powder MINTA

Continues to lead; fully guaranteed. Remove from bolies and prevents its formation. Send to lar which there are none Avoid IMTATIONS.

J. O. WINANS, Agent, 204 Montgomery St., San Francisco.

THE RUSSELL PROCESS COMP'Y.

NEW YORK OFFICE, 18 BROADWAY

STEIGER & KERR, JAS, W. KERR

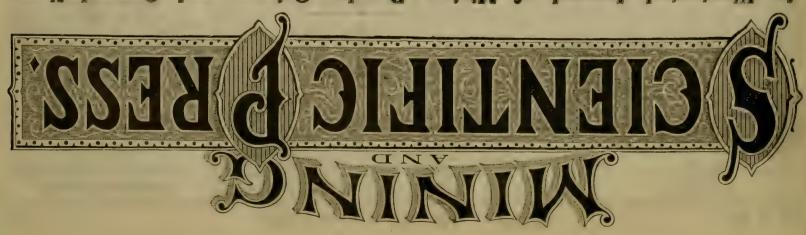
AND RAILROAD CASTINGS.

CHILLED

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

MEDAL AWARDED, MECHANICS, FAIR.

HAU



Illustrated Journal of Mining, Popular Science and General News.

Number 6.

SAN FRANCISCO, SATURDAY, AUGUST 6, 1887.

BY DEWRY & CO.

More of the Alten-Act Blunder.

But by some unaccountable neglect or over-sight that body did so subject them, and we need you be now on the source of the or or source of the source of the source of the Resides this source of restriction of the Resides this source of the intend to subject them to its provisions. ing the Attorney-General arrives at the con-clusion that the mines are exempt from the operations of this Act. It may, no doubt, and purely be observed at the con-clusion of the con-traction of the co construction of the law or process of resso real estate, we are curious to know by what ot, done soon to intentiate to become such to the setter and or other acquire, hold, or own the feeters, in any of the Terrories of the United States." Now, it of the United States that it won't won't won't would be the feeters of the control of the feeters of the control of the feeters of a citizen of the United States, or who has the law says, omitting some of its verbiage: "It shall not be lawful for any person not the press, this whole miserable business is getting to be badly muddled. Here is what What between the construction said to have

press be undone. These investors will be likely to adhere to the opinion that when sirent edt to traq edt no noitanicoitar ro work on the minds of foreign investors, and this work cannot by any legal quibbling actment has accomplished. It has done its Besides, this sort of pettilogging will not avail to repair the misohiel this idiotic en-

awakened among the English a disnot soon recover, even if it could be repealed to-day. This measure has awakened awakened awakened

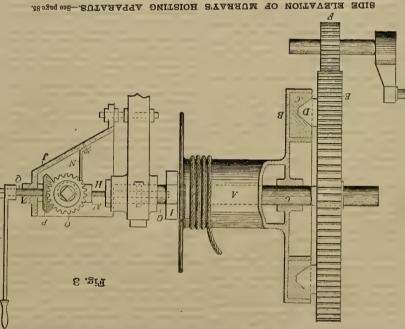
tadw asem ton seob ti tant seonarus mining regions so long as this law-remains in force, despite these salikely to invest in the proscribed insane legislation, and not another pound will the British public be trust to sidagae elqueq a to taurt

time since was on this market seek plained have been assessed too high we notice one that only a short Among the mines which it is come would be asking for them were any one seeking to bond or buy them? properties have been assessed com-pare with the prices the owners value, which, in most cases, is no doubt true. But how, we wonder, would the figures at which these greatly in excess of their sasesaments levied on their proper-ties, on the ground of their being application for a reduction of the and to ynam tadt over one of West and one of Merican of the State of t Тезтер ву Анотнев Зтаираяр.

assessor or the promoter of this polythe county represents its value, is what we are at a loss to know ! as the valuation placed on it by the county assessor. Which set of figures, that of the county During the past month three of possession of it. The Ab Ping claims the prop- month ago Hugh, his oldest son, was killed in lings purchaser at more than as a minch of the past mone of it. The Ab Ping claims as minch of the past mone of the property of the past was also been a second to be a

CONTENDING CHINAMEN.—A ministure wat the Contending A Series or Misportures,—A minet mend on the composed between two Chinese com-

senting an improved form of ore-feeder, recent- olsim on Mormon Island, Sacramento county. | crossed which, from the peoulist manner of Both conpanies are street to the content of the C. C. C. wine, and it is feared amputation of the companies are street to the companies of the We take occasion to present a clicks repre-senting an improved form of ore-feeder, recentis now being waged between two Chinese com- Heinrichs arrived in San Francisco a day or two panies for the possession of a valuable mining since from Virginia Oity, where he had his foot



declination as millineure a regular ore-bin gate opening. Each of

to mee been tested and proven by dead are been placed in use, and in the event that it may be one tested to utilize ore feed. ever necessary, by an adjustable gate fitted in the chute.
The practicability of their operacharged into the mortars, the flow of the ores being regulated, whensib to begqorb bas ot beittes ylls feeder, whence they are automaticand to state the record of the same and the state of the record of the r

seer floor and free ingress to and egress a wolls emit emas ent ta bas srebeet edt

Hoor as to obsiste the necessity of as rooh

of the mortars, then the feeders can be sus-pended at such hight above the battery

elevation above the throat or feed opening

or making repairs may occur, or when the topography of the millsite will permit the mill ore-bins to be placed at a sufficient

whenever the necessity of tightening bolts bolts and all other parts of the batteries, free access to the mortars, their foundation

wolls of stistuper ed yam se sonsteib dous seeders to be moved back from the mortars their apper sides, thereby permitting the ores. These timbers have a track laid along ends by standards or posts placed back of the batteries which are to be supplied with

leading from and supported at their other hangers from timbers of anficient size and strength, gained into the battery posts and lenge" teeder suspended by wrought-iron in having the lately improved atyle of "Chaldisclose the fact that the innovation consists

lliw noitentenlli edt le noitenimeze nA

ite suspension, has been denominated the Hendy Improved "Challenge" Suspending

A Saspending Ore Feeder.

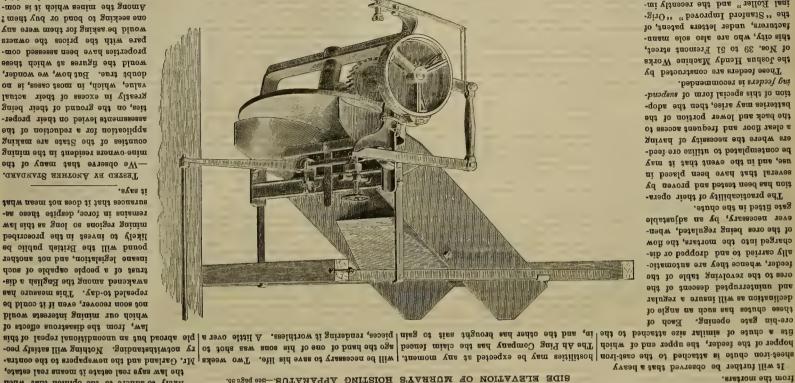
from the mortara.

ing feeders is recommended. the whore the accompany of haring a value and the access to a lear floor and frequent access the back and lower portion of the adoptate in the access and a lower portion of this appeal a lorm of superadding the accompanded.

inal Roller" and the recently im-proved form of celebrated and world-wide known "Challenge" feeders. this city, who are also sole manu-facturers, under letters patent, of the "Stanford Improved" "Orig-These feeders are constructed by the Joshus Hendy Machine Works of Nos. 39 to 51 Fremont street,

the leading mines shipped 511 flasks, or nearly 39,000 pounds. du gaistool THE Maps quicksilver mines are

THE deepest mine in Victoria, N. S. W., is the Magdala. It is down 2409 feet.



HENDA IMPROVED "CHALLENGE" SUSPENDING ORE-FEEDER.

erty ander a deed from two men named Gibson the Opbir mine, being pinched by a car. The and Carr. In the last four months over \$3000 injury was followed by blood-poisoning,

wagon in San Diego, also in Arizona. A SUCCESSIUL test has been made of a steam

.esirgretae ni "asm aspileM " edt gaitalu has been expended in the development of the mine, which shows that the Celestials are em-

#### Electricity.

The pile of Daniell is one of those most frequently used in the industrial stre, and renders are greated in the industrial stre, and reached service in galvane-plastic laboratories by resceed it its regular effects. Mr. Carre has succeeded in diminishing the interior resustance of the parparation, replacing the porous vessel by a papel present increasing the power enough to produce the electric light (arc) with enough to produce the electric light (arc) with

enough to produce the electric light (arc) with 60 elements.

The Minotto
The observable of the selectric light (arc) with 60 elements.

The Minotto of the send in Italy and in English line, constructed with sand instead of a porous vessel, impregnated with a sale solution of sulphate of copper, in which do not mipel placed upon the sand separates it from the peper is submerged, a lest of securite papers of copper is submerged, a lest of securite papers of such the send separates in the solution of a pile with two liquids, which do not mingle a pile with the send separates in the solution of a pile with the send separates in the solution of a solution of the send water and the send opper. In this is placed a plate of copper united to a wire of the same metal covered with the send of such a send of such a serial select of the send of such a select with the solutions of such a solution of the solution of the solutions of the solution of the select of the solution of the solution of the solution of the select of the solution of the select of the solution of the select of the solution of the select of

Pile of Mr. Heynler
Is constructed of a porous vessel of papel
uporgaminado which contains the sinc; the other
element is a plate of copper. The solution that
Mr. Reynier employs is sulptate of copper
and weak caustic, thus increasing the electromotive force of the Daniell element. In 1838,
motive force of the Daniell element.

where we was the consistence and the case of the consistence of the Daniell should be consistent of the Chrone.

Becquerel and Grove.

English physioists, conceived the idea of forming a pile, using potesh and nitric soid for dependent of the consistence of a vessel of glass partly pile of Grove consists of a vessel of glass partly pile of Grove consists of a vessel of glass partly pile of Grove consists of a vessel of glass partly pile of white a cylinder of side upon a consist of the two extended of the consists of consists of the consists of the consists of the consists of the consists of consist

.tasın ei sonatsissı Have constructed a pile with water and sul-plate of mercury which absorbs the bydro-gen and leaves free the mercury; this pile needs little attention, since it suffices to replace the water which is evaporated. Its internal resistance is great. Becquerel and Marie Davy

The water which is evaporately, its internating the water which is evaporated, its international profiting by a trial made by de la Rive more than 30 years ago, organized a pile of peroxide of manganese, which is how universally employed. It is a vessels of glass, half thal of a solution of lorthidate of glass, half that of school, peroxide of manganese and rosin. Chemical action takes place only when the circulation of lorthidate of mamoniac, in which is closed, the electro-motive force being then out it is closed, the electro-motive force being then out it is closed, the electro-motive force being then out other attention than to replace the water considerable. It does not amon used in electrimonal and call the water and other attention than to replace the water trimbres. The pile of sequioxide of iron only by the substitution of ordive force is conditional and dailiers from that of Irolanche of Ironaganese. Its electro-motive force is considerable, but it has an enormons internal resistence. It is employed for medical battenies sieterable, but it has an enormons internal resistence. It is employed to medical battenies which requires contrinuous current.

Warren de la Rue,

An Tingin pequite a continuous current.

Warren de la Rue,

An English physicist, has constructed magnificant piez of chloride of silver. In a cylindric y cent piez of chloride of silver. In a cylindric y solution of olorhideato of ammorate, he introduces the soluble electrode of since without amalgamating, and the pregative formed of a ribbon of silver, and the whole inserted in the cylinder is of silver, and the whole inserted in the cylinder is of silver, and the whole inserted in the cylinder is of solved by degrees, and replaces the silver in the chloride. The silver and replaces the silver in the chloride. The silver in the chloride of silver, and the inserted in the mass of the chloride of silver, and the insertion of the chloride of silver, and the latter supplies the chloride. In all these piles the regain electrode of lorine necessary for the dissolution of the chloride. In all these piles that cashly separate the chloride of silver, and the negative electrode orbiorine notes and the comper, platinum, carbon, silver—is surplies the byloride of silver, and the silver—is surplies the regain of the component, platinum, carbon, silver—is surplies the platinum, carbon, silver—is surplies the platinum, carbon, silver—is surplies the tending of the corprore that is produced in the piles and prevents paralyzation. A mixture of two substances oxygen or orborine or disconsisted the silver and discossonygen or orborine is likewise takes place.

lands embrace every variety of soil, and are suiteed to an infinite variety of outlivation. They
are subdivided into tracks of 5, 10, 20, 40, 80 and
160 cores. The title to these lands is as perfect as any in the State—a grant confirmed
by United States patent.
Irrigation.
Irrigation.
Irrigation.

Irrigation in some form in some

THE GREAT MIVES OF THE WORLD.—The and respect be any to be allowed in the climate. The land may give out.

THE GREAT MIVES OF THE WORLD.—The world-famed Potosi mines of Bollivis yielded \$10,000. This sum is large, but to obtain it the labor of five generations of mines was required. In 27 years the Comstock mines have yielded \$410,000,000. The and a new system was required. In 27 years the Comstock mines in the lode will be made to yield up as much the len ext S of your of the the respectively. See the Potosi with the Comstock. These are the Potosi with the Comstock. These are the Potosi with a \$1,000,000,000; Starts Mader, \$800,000,000; Starts Mader, \$800,000,000. The maxin order, the next S of Sec. \$600,000,000. Mext to the Comstock of Sec. \$600,000,000. Wext to the Wield and the Respect of the world is the Comstock of Sec. \$600,000,000. Wext to the Wield of Sec. \$600,000,000. West first to the Comstock of Sec. \$600,000,000. West first to the World is the smalline, with \$800,000,000. West first to the World is \$800,000,000. The maxin to Sec. \$600,000. Sec. \$600,000,000. Sec. \$600,000,000. Sec. \$600,000,000. Sec. \$600,000,000. Sec. \$600,000,000. Sec. \$600,000,000. Sec. \$600,000. Sec. \$600,000,000. Sec. \$600,000. Sec. \$600,000 Extent and Character of Land.

For the better handling and more ready development of the lands in and about Jational City, an organization has been formed and Enown as the San Diego Land and Water Co., which includes under its booth 50 gouter miles of territory, including the ohief portion of the Mational ranch, the Otay rancho, and other portions of adjoining tracks. These About four miles south of Sam Diego, still be, in the smooth of Sam Diego, still be such as the story of the treatments of the story of

National City.

Копревороемсе,

We admit, unindersed, opinions of cerrespondents.—Eds.

Southern California.

[ио. б.—соитіииер.]

San Diego and Its Surroundings.

(Editorial Correspondence.)

The city of San Diego will ever be a memorable spot in the history of California as the lost cality where the earliest steps in civilization on this portion of the Pacific Coast were taken. It was here that, on the Solh day of July, 1769, Father Junipero founded the first mission, which constituted the great chain of missions, which subsequently extended from thence morthward as as Sonoma, comprising S1 in all, as fat as Sonoma, comprising S1 in all.

and legislative action can make them.

The Climate of San Diego
It probally the most perfect seaside climate in the world. An official record kept at the U. S. Signal Office in that city, embracing the period Signal Office in that city, embracing the period in these 10 years, embracing 3653 days, there in these 10 years, embracing 3653 days, there were 3533 days in which the mercury nos an average of only 12 days in a year. Further, there were only 41 days on which it peased that point, an average of only 12 days in a year. Further, there were only 41 days on which it rose above 95°, and only one day on which it rose above 90°, but 4 days on which it rose above 10°, and that was on the 23d day of September, 1883, when it touched 10°.

Total day of Dependent, 1003, when its bounder of the 200 day of Dependent, 1003, when its bounder of the 201 perallel, and locality a few miles below the 32d parallel, and which curs the Ashantic States three degrees be deorgia and South Carolina; 101 course there Georgia and South Carolina; 101 course there never can be snything like a "heated term" in a never can be snything like a "heated term" in fast leffects in most of the Mississippi and Atlantic States.

Then, taking the other extreme of the 3653 days above alluded to, there were only 93 days on which the thermometer fell below 40°; six on which the thermometer fell below 40°; six below 35°; two as the was 35°; two as the substitution of the substitution of

tell below \$55, two as low as \$2\$, and mone which fell below \$55, two as low as 0.00 and the which fell below that point. On no day did the there would not be difficult, if not impossible, to find any place among civilized localities on the globe averaging such an equable temperature.

It would be difficult, if not impossible, to find the strongbaren, a temperature of the chynese of the strong the strong of the chynese of the strong the strong of the chynese of the strong of the chynese of the strong of the strong of the chynese of the strong of the strong of the chynese of the chynese of the chynese of strong of the chynese of the c

The Boom in San Diego.

Yes, there is a boom in San Diego.

Yes, there is a boom in San Diego.

It is being overdone, but when there is a not a

broad and fully acknowledged foundation for it,

who knows? The boom at San Diego, as well

sa in all Southern California, is based on ample

NORTHERY ARIZONA—Prescott is about 5400 feet above the sea, surrounded by mountains of some of whose summits are nearly 14,000 feet above the sea, surrounded by mountains freely and the sea, surrounded by mountains of the sea and their foothills are covered with pine, oak, cedery judged well to consider a sea of the sea the sea the sea to bloom years the seas in sea of briefs grows for sease sea in that of the Whole capital food of the most of the streams and in the varieties grow along the stream and in the varieties grow and the

open to the public so often as to become too often as to become too of money appeal to the public so new and quite pleutiful facts, you will notice a new and quite pleutiful.

Turning from these seems and quite pleutiful. Applications to the invitations to all states, and yet it is not because the general public has and yet it is not because the general public has the posterior to so an barres, and promised ("syndicated pre-yeight and promesses, as in that of the Pittsburg Control of the presents of the analysis of the work of t

#### Lixiviation of Silver Ores.

A Description of the Russell Process.

THE FIRST VESSEL to be propelled by electricity ever built in the United States is now in Jourse of construction at a shippard in Mewwitch X. It is a yacht 37 feet long, Y. It is to be operated by etored electricity. It is building for a Mewark, I, J., electric company, and will be run because Management of the company and will be run because of the company and will be run because of the company.

WILLIAM EGAN of this valley has discovered as extensive salt marsh, about 80 feet across, says the Lakeview (Or.) Examiner. Around the edges the ground is covered with a three find layer of good salt. All through the center the water boiling. All the water boiling water between the water boiling water to evaporate the water in now busy building water to evaporate the water in sale.

An IMPERIDING BOOM,—Reports from the factor of the factor of the factor of California below that the office of California above that the office is almost blockaded with work in relation to applications for the office of the olerks is althority for the statement that there are authority for the statement that the State, '' seven there is a many applications of this bind as ever before in the history of the State, and that the present clerical force in this office, and that the control of the state is under the present clerical force in this office is a below the state of the state of

MINKES 'WAGES.—For several years past, asys the Reno Journal, rumors have been aloas aloas

A paper by G. A. Steteleldt defore the American Inetlitute of Mining Edymeers.

(To de Continued.)

to the care of the course of t ATTENGENIER S.]

The lixiviation plant, and in fact the whole are very considered metallurgate, not by a milling the plant, and in fact the whole arperienced metallurgate, not by a milling the relation of their own, and without the latest knowledge of any essential requirements. The least knowledge of any essential requirements. It is a few to the following I merely wish to draw attention to some important points that a should not be a lightly a preglected. For charging the ore a slightly included one that should not be a neglected. For charging the ore ore a slightly bine of the charge of the properties of the silver precepties of the properties of th Just quotalvixid edt to tnemegnarra. [NUMBER 3.]

A special correspondent of the New York Mining and Engineering Journal, writing from London, tells the following, which should be

London Mining Syndicate.

months of each year. Fruits of various kinds are successfully raised in the lower altitudes. Grapes grow wild each all who have tried tames grapes are pleased with success. Our forests grapes are extended with a sea in a set extended grape, sing lands as into a sea no sea in it of each annerous. All domestic animals do world, and all know that on metals are both in this country and clime. Human belong well in this country and clime. Human belong not in a land where the sir is pure and where the sun is to be seen almost every day in the the sun is to be seen almost every day in the the sun is to be seen almost every day in the lost it is to be sick, wealth to the gives gives health to the sick, wealth to those who want it health to the sick, wealth to those who want it health to the sick, wealth to those who want it

The Outlook at Picohe.

Testenday our reporter, says the Eureka Scatimes, and the manifest of the California of the Californ

Manhatan Company, shalt of paying their employes in aliver notes, in our opinion, is not the control of contro

then we will have an use for neational banks, and will parce a. U. S. note that will passe and will have a U. S. note that will passe, and will parce a. U. S. note that will passe and will parce a. U. S. note that will passe that a fair will passe and will passe and will passe and will passe and will passe to the Golden Horn, and electrone to the Golden Horn, and electrone the will passe will be the Washbartsan Company. We said that the Manhartsan Company was merity appropriate that we show our preference will be will be

The Manhattan Company Paying in That Curtency.

Curtency.

Among the numerous innovations in the line of progress made by the new management of the Manhattan Company, that of paying their employes in silver notes, in our opinion, is not the slayers in silver notes.

#### and Assessments, The Comstock Mines-Their Product

other of the several theories promulgated in re-gard to the scope and strike of the great Washoe lode is adopted, To see vigarious accordingly as one or stock mines" may be made to cover a greater however, be premised that the term "Comsupply here the desired information, which we think will be found approximately correct.

Before proceeding to give figures, it should, ew epublish the same in our next issue, we referred to us for decision, with the request A controversy having arisen in Grass Valley in regard to the value of the bullion taken from the Cometock mines, and the extent to which it exceeds the assessments levied on those mines, and the question so raised having been referred to us for decision, with the request

eral veins, some of which lie so near the principal lode that geologists are not agreed main lode, the mines along them have produced but little bullion, although a number of them have been heavily assessed. The country trav-ersed by the Comstook lode abounds with lat-erse in a superior of which lies on the superior of the of these two branches nearly equals that of the through American Flat, while the other, deflecting at the Overman, follows down Gold canyon to the southeast. While the united length the main trunk, one of which continues south betaced semim ymmr a great as to see for to to to sedonard owt ed of rebisnoe stends of the sedonard owt ed of rebisnoe stends of the sedonard owt ed of the sed me hold to be the case, then we shall leave as estainment eredt it that buil ew elliH blos ta daming it thence south to the Overman ground If, commencing at what is generally recog-nized as the northern end of this lode and fol-

expenditure in this behalf amounting to \$195,-000,000, net estrings to \$115,000,000. We emot nistreque esiw yas ni ro gaoled et bec the Comstock lode. For ourselves we prefer one the several matters here albeded to, one stitutes such an element of uncertainty that different parties have sometimes reached slightent parties have sometimes reached slight on different conclusions in compiling data on of it or not. The room that exists for a difference of opinsegabnequa berehiance de binoda vether they

money raised by assessments have therefore fores apent in and about the mines; the total One hundred and torty-five millions besides the evoda has vevo bearse 000,000,032\$ e1 10 mes devel 000,000,151 vine transmesses of the shell of the same of the second to the second of the se part of the purchase money paid for these properties, nor any of 'the expenditures made by the original locators' in improving them. Ilams a nadt erom von Ila ebuleni ton ob yedT not, however, represent the total amount of ex-penditure made on account of these mines. ments by \$260,000,000. These assessments do to \$80,000,000, total product exceeding assessthe Comstock mines to date amounts to about \$340,000,000, assessments levied and collected the value of the gold and silver turned out by the great ore channel, lateral veins and hypo-the great ore needed. In this large sense timates cover all that can reasonably be supthe correct view of the subject, making our esto take the more broad, and what seems to us

LARGE quantities of bituminous rook are be-ing shipped from San Luis Obispo, ay even be considered highly encouraging. gloomy and uncertain is now much improved, low in their wake. In short, the outlook on the Comstock which only a short time since seemed number of years had nearly oeased have by several of the companies been resumed, with a good prospect that others will before long folmaterially increased, Dividends that for a reversed that the excessive outgo has been largely curtailed and the former slender income long obtained on the Comstock has been so far ried on in the low-grade reserves existing above, the unhealthy condition of things that so ploded, tearing off the two middle fingers of the left hand and mangling the palm of the hand spended and ore extraction more actively carore bodies, these explorations have, of course, yielded no adequate returns. Having been companies. Having brought to light no valuable The major part of the assessments collected of late years has been expended in the deep ex-plorations prosecuted by the leading Comstock Jose Robles, a Mexican miner, while on his way home last Sunday morning, being intoxi-cated, fell headlong into an abandoned abatt at the New Almaden mine and died half an honr main mother lode.

outly was incurred on the strength of the

pay deposits in the vicinity of the Comstock we

dealing with this class of facts. Of the large sums spent in the early day prospecting for

ploy here round numbers to express totals be

ni eldanista ton si ssentesza retesinable in

ke no note, though most of this unprofitable

A cave took place last week in the Esperanza near Washington, Mevada county, California, was killed last Monday by falling down a shaft Seety. A Chinaman employed in the Spanish mine

so badly that amputation will probably be nec-

extridge which he was holding in his hand ex-

ing a blast on Saturday last, a giant powder As Ed Martin, a young miner working in a mine near Lovelock, Butte county, was prepar-

Mining Accidents.

in San Diego, where he may be addressed on matters of business.

instrument in some minor details. He resides

angle with great nicety and steadiness. The inventor in now in this city perfecting his new

this fluid operate the pointer, indicating the

latter, composed of one or more blades, is mounted on a pivot in a circular chamber, wherein the fluid is confined. The motions of

fluid weight for actuating the indicator, which ald in betaivdo era selduors evoda ed lo IIA a lo Juemyolqme edt figuords taemrisai wen

deal after the instrument has become stationary. boog a stardiv ot ti esuso oals they along a good

these weights require a considerable change of the indicator of the indicator

for moving the indicator. But the inertia of

sitiveness and ease of adjustment. In most previous devices of this kind weights are used

ooth as regards simplicity of construction, sengreat improvement on the old-style instrument,

Jefferson Kindleberger of San Diego has in-vented and patented a clinometer that seems a

Improved Clinometer,

lieve foreshadows what is in reserve for many

case for many years past; and this resurrection of the Comstock to a new life we may well be-

ncouraging outlook to-day than has been the

the great lode took a new lease of life, and a more

nigh. But with the occurrence of that event

stopped, many began to think the end was

ing an adverse judgment. A year ago when deep exploration on the Comstock mines was

matters of this kind, is less hasty in pronounc-

The novice may condemn them as being of no account. But the old-time resident, recalling how often he has had to correct mistakes in

large value to lands once considered worthless, so will the years to come show these now neglected mines to be worthy of attention.

As the passing years have served to give

but from which we here venture the predic-tion they will in good time recover.

leftl them in the condition we now see them,

a reaction that depopulated hundreds of min-ing camps all over the great Utah basin, and

causing an unwonted excitement. Then again,

whoop and a boom, the great Comstock find vigorously pushed for a time, when this indus-try, in turn, suffered some abatement. Then came the spoot of silver mining introduced with a

pranch of the business. This was the tidal and depression. The richness of the surface placers imparted at first a great impetus to that followed the property

lowed each by seasons of comparative dullnes

da, Utah and the countries adjacent. eveN ai squaso gainim benebasds-lish esedt to

siter from concussion of the brain.

that it was expected he would die.

shaft, Lexington district, Ventura county, whereby the timberman was so hadly ornshed

Mining on this coast has not had a steady and even growth. It has been advanced by eras of ahnormal activity and progress, fold anything to be seen at present. by others more perfect, every appliance and department of mining being advanced far be-The places of incompetents will be filled by skilled and trained experts. The present mechanisms and methods will be superseded

wave that swept such a vast immigration to California. Following the partial exhaustion of the placers came a period of inactivity, after which quartz operations were inaugurated and vicentally muched for a time super. This is the a ni anoiaulonoo ralimia warb ot mid gaibael agaidt 10 etste ralimis a erect stoirtein gaiaim, and were now dead forever. Passing over into Nevada, and thence on into Utah and the countries beyond, he would see in many of the he would say these camps had lived their day less decadence. Seeing on every hand only the evidence of desertion and decay, the hamlets unpeopled and the well-worn trails obliterated, ing districts of California, he would be apt to conclude that they had been exhausted of their resources and fallen into a condition of hope--nim reblo edt to emes agnordt fevert et noits Were a person not conversant with the situ-

Bailt Up.

When the Waste Places Shall, be

gard to their future.

And yet this stranger would be laboring under a mistake. The conclusions drawn from
such seemingly sound premises would be altogether wrong, and were he to go away with
the impressions so received uncorrected, he
would bieself he wisled and so recherce, he

possessed of so many natural advantages came to fair, very often in ample, supply. If it be seked how happens it that localities good. Generally wood, water and grass are in Amost everywhere the soil and the climate are agricultural and mineral resources combined. In some cases these capabilities onesist for the most part of mineral, though usually of both noiteluqoq eldarabides of a considerable population. they seem to be. In almost every instance they possess capabilities and forms of wealth ample In almost every instance they visited are as devoid of natural resources as Mone of the localities so supposed to have been would bimself be misled, and so perhaps be made the instrument of misleading others.

doned in consequence of this class of deposits having been worked out, But there remains still in the most of them a great extent of deep ntiginally rich in surface placers were abanbe so deserted and given over to decay, the an-swer is this: Such of these districts as were

anch of these old placer camps as he within the limits of California. In this State but few of the quartz districts have suffered the decadence much progress having been made of late in already begun, will be hastened through the chespening of transportation, labor, machinery, and the other factors of bullion preduction, overcome. The work of their rehabilitation, vented further mining operations being under-taken there. These, however, will be inaugu-rated accordingly as the above obstacles are placers and vein mines, with which little or nothing has yet been done, their remoteness, difficulty of access, or other cause, having pre-

ріолеег ід уезtога іл патрегіева сався раув респ ill-advised expenditure, in some form or other, meets the view. The experiences had by the gle canyon there but evidence of premature and We can look through the gates of hardly a sinunemployed mills and furnaces, its untraveled roads, untenanted towns and ruined cabins. Meyada, Utah, Idaho or Montana but has ite in vein-mining localities; in some of which the backward march has been alike marked and de-plorable. There is harily a mining county in here being remarked upon, The retrogression that has taken place in the other countries mentioned has occurred mainly

could come out of such mining Mazareth. of a kind ealculated to discourage even the most sanguine, and cause them to doubt if any good

been due to the extravagant hopes and the ex-citement incident to the pioneer stages of the qualifications for either, these mistakes having netances both ore extraction and treatment have been committed to men who have had no by the processes employed to that end. In some cases failure has been caused by inexperience and bad management. In very many to a variety of causes. In some cases the ores, though of good grade, have proved so refractory that they could not be successfully beneficiated And yet there awaits even these dead districts a resurrection morn. The most of them abound with deposits of the precious metals, some of which are known to be both rich and been exploited and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with profit is due to a very supplied and worked with a very supplied with a very supplied and worked worked with a very supplied with a very supplied and worked with a very supplied with a very supplied and worked with a very supplied w

built up. The old mills and furnaces will be kinds of boi restored and larger and better ones be erected. era these waste places will be repeopled and cessfully overcome. With the advent of that the day will soon arrive when mistakes of this kind will be avoided and these troubles be suc-But all this is being gradually changed, and

> A. T. DEWEY. SCIENTIFIC PRESS. MINIME

DEWEY & CO., Publishers.

Office, 220 Market St., N. E. cor. Front St., S. F.

Terms of Subscription.

Annual Subscription, §3. Wew subscriptions will be declined without cash in advance. All arrearages must be paid for at the rate of \$3.50 per annum.
Advertising Rates.

Entered at S. F. Post Office as second-class mail matter Our lakest forms go to press on Thursday evening.

SCIENTIFIC PRESS PATENT AGENCY.

A. T. DEWEY. G. CO., PATENT SOLICITORS.

Saturday Morning, Aug. 6, 1887 SAN FRANCISCO:

TABLE OF CONTENTS.

EDITORIALS.—A Suspending Ove Feeder; More of the All Suspending Ove Feeder; Who was the Alian Act Bundle, RI. Passing Events; When the Waste Places Shall be Bullt Up; Improved Clinopactor, Mines—They Produced and Assessments, St. Muray's Hoisting and Phistopactale, Apparentus; St. LLUSTRATIONS.—Side Discharging Apparatus, St. Muray's More of Muray's More of Muray's More of More of More of Muray's More of More of More of Muray's More of More o

CORRESPONDENCE.—Southern California, 82.
MISOELLANBOUTS.— Escribeit, 38. Sulvent Motes; The Outlook at Picche; London Mining Syndicate; This Visivitation of Silver Ores, 83. Monterey County Mines, 87.

Micoes, St. McGeres, St. Macoes, St. Macoe

tana, New Mexico, Oregon, Utah, Wyoming, 88-8.
MINING STOCK MARKET.—Sales at the San
Francisco Stock Board, Notices of Meetings, Assessments, Dividends, and Bullion Shipments, 9S.

Business Announcements.

Electric Improvement Company.

Passing Events.

The closing week has been signalized by nothing specially eventful in the mining world,

bullion production for the year.

In sections of country where the quartz-mills persperous state of affairs and an increased less importance, are of an altogether cheerful and encouraging a generally the great industry, as well as from localities of to aretnes gainesel shi mori band to smoo tant among any other class of operatives whatever, strikes being rare, while the boycott is an institution in the mines little known. The reports among the knights of the pick and shovel than other departments of pusiness. It is worthy of remark, too, that we hear less of labor troubles of life and property, to record. From these, mining has, in fact, been more free than most also are there no accidents, largely destructive If there be no great mineral finds to note, so

dustry of much importance in this State, and one that has so far been highly favored the some injury to the quartz men, it operates to the advantage of river-bed mining, now an inmerly; and it the low stage of water works power. The suspension of so many of the by-draulic mines makes, however, a water famine in California of less consequence now than forare propelled by water, some of these mills have been obliged to shut down or run a short time, owing to limited supply of the motive-

county, Cal., last week. 150 level of the Indian Creek mine, Calaveras A LARGE body of rich ore was struck on the

reported in Spring Valley gulch, Butte county, ar someovery of a large ledge of asbestes is

An inventor in Chicago expects to make all kinds of bottles out of paper. They are cheaper

K journaled across it, so that its center is op-posite the end of the Fig. 4 V emeri liams a emeri se fixed, having a shaft the outside of the main ntact sufficiently to cause the drum to re-te. The stem is operated as follows: Upon V red out eessenq is brawn alone to more out jone so the part of the standard of the control of the standard of the control of transparent plate or bar I passes through the slow, so that when the end of the shaft Q, and a small rod or stems the shaft. Slots are made in the shaft in the plane, of the outer drammhead, and a less the triotional surfaces are forced into con-tact. In order to do this a hole is bored into

-ruoj O tlada troda a ot naled in the frame ao ·leved Zaibnogserroo bexñ ed ysm A leedw the shaft K, and a corresponding bevelthe frame J. A bevel-or bear wheel O is fixed to ward, and is bolted to .W brahasts-gairgs s -awob abastxs doidw to the step for K. The top for the step of the top of t receive washers, which where the stem of the stem which passes into it, which passes into it. Upon the center of this shall be it is the stem of the

ostrus Isnoitoiri bas also, thus relieving the the drund the drum mund end mon the drum moves the box M back occentric back, and the elastic When the lever R is moved in the opposite direction, it draws the into contact. peoro Trictional surfaces are drum slong, so that the Zaissorq arut ai еца through it forces then H forward, epgs through them the eccentric L, which presses it turns the gears, and beyom ai revel aidt nedw arm R keyed to it, and that the gears mesh. The shaft Q has a lever-

He ta eldarised si ti bus revel edt qeex of semit-reog emas edt trode ni

eam or eccentric is small,

the shaft, to anwind the turn backward upon This allows the dram to

tomary brake. rope; or it may be held at any point by the cus-

The movement of the

the main frame. As the frictional surfaces become worn the nuts may be loosened and the frame, I moved up until the distance is proprictional surfaces. 

trame J moved up until the distance is prop-arly adjusted, when the nuts may be again the bread.

The essential feature of this hoist is the sceen-tric, and a means for connecting it with this stem by which the drum is moved, and the fric-tion adjusting the parts to compensate for west.

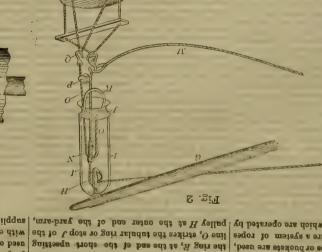
By thus mechanism the amount of motion nec-tered is very short, and it may be made almost instanteneously, while the power is authiciar to arreat the weight at may be made almost instanteneously, while the power is authiciar to arreat the weight at my point. One of the arreat is used is in handling the pine-driver barn-drum is used is in handling the pile-driver barn-ner—striking 30 blows per minute in a 30-foot 1itt.

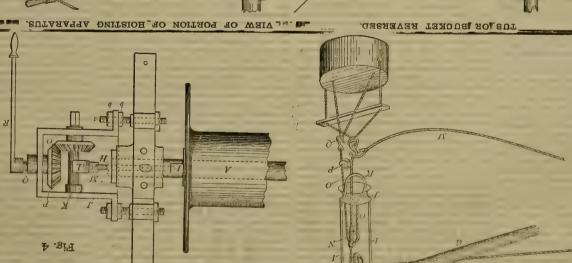
ang or stop R, and these, weighing inside of 50 pounds, can be put in a wagon and carried to pounds, can be been show, and the expense any vessel which needs them, and the expense

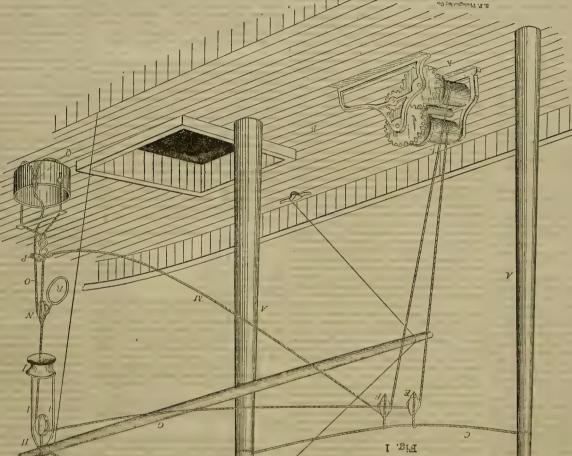
The boisting dram K is first set in motion, and with the tubular ring J, which and the chartesting the congress of the said the chartesting to list so clear the rail of the said the short which the dram K is specified by J, with the short which the charter which t

Anny Scienciary percented targets by Marrian Parish and the same and the suppose the same and the suppose the same and the suppose that the same species are used.

The suppose the suppos and the dram L is set in motion, and by means of the dram L is set in motion, and the rope passing through the guide H on the continual pulley H on the continual manufactures and the continual manufactures are continual manufactures.







GENERAL VIEW OF MURRAYS HOISTING AND DISCHARGING APPARATUS.

pinion, these parts not differing essentially from more those in common use. The drum is fitted to drun loosely upon the shaft & to which the mort great-wheel E is keyed, and is not rotated up. lift, V-shaped channel formed in it. Use the corresponding triotional ring, which is fixed to the side of the grand R, and F is the driving the rope-winding drum of a hoisting apparatus, with a flange B chambered to contain the an-nular wood or other frictional material C, with a portion of the same. This device takes the place of the hoisting drum shown on the deck of the vessel in Fig. 1. In Figs. 3 and 4.A is gear. Fig. 3 (see page 81) is a side elevation showing the drum, frictional device, gears and socusting mechanism. Fig. 4 is a plan view of

ered, ready for another load, rope & being relieved, and when it reaches its position above the hatch, it may be again lowrights itself by reason of the ring R and the obsrged. As soon as the dram L is allowed to run backward and the bucket to descend, it A when the continued movement of the hoisting is his patented hoisting apparatus and the means order to do this the applemental frame J is seed to the main frame by serew holts and look and its contents dis
or out of contents of contents or setion with the drivingmust it is upset and its contents dis
or out of content or setion with the drivingmust it is upset and its contents dis
or out of content or setion with the drivingmust it is upset and its contents dis-

whole device from his position at the engine, which may be either on the deck of the vessel device, the engineer being able to operate the It is not necessary to have any one with up-setting lines to be worked by hand or any other

The whole work is rapidly and accurately done. The only device necessary in addition to the blocks and tackle, usually found upon Wessels, and the bucket, is the pulley H or on the wharf, as is most convenient.

> Apparatus. Murray's Hoisting and Discharging

We give on this page engravings of an improved hoisting and cargo-disobarging apparatus, recently patented through the Minimo And Sole affect, machinists, of MS Beals street, San Frees, machinists, of MS Beals street, San Frees, machinists, of Minimo coel pallest.

nen to operate these dehand, and a number of

edt ot beggir ro bedeat ot lessey eno mort beir -ts ylisse bus redtons ran ed yant doidw be by the engineer alone, betsreqo ylisse si doidw yllsoitsmotos as dsia Mr. Murray's inven-tion is designed to fur-

apars of the vessel, In the engraving there

yard & extends bucket reversed. view of the device and Fig. 2 shows the tub or of the outs is a general Fare attached. Fig. I a bus , essel, and a stay C, extending be-tween them, to which the pulley-blooks E and A A, rising from a deck

becoming entangled.

K and L are the winding-drams of a double either end to prevent the moving parts from ta atuom gairsh a diiw either side and termi-nating in the tubular obem si doidw , L gair I extending down upon having the arms or rods tached a pulley block H of the yard-arm is atthe bucket to the proper hight before it is dis-oharged. To this end saind or Literatly to bring gle, so as to raise the na beriesb yna ta tesl cock-billed and made ed yam doidw bas stsam across from one of the

the backet near the to sail gaibnequue edt ot bedeatta ai bas .V. down through the ring through the pulley H upon the end of the yard-arm D, and thence јед рјоск <u>к</u> грепсе Биваса пр олет гре ријdrum L snother rope it, as shown. From the down to the bound of awob mort bebrackers and doing mort before a transfer and a set of the set of employed upon the whatves. From the drum K a rope M passes up over a pulley Fand varied by the ordinary clisus a migne-yearly windlass, which is op-

may swivel or turn around them when it is to be appear. At the opposite end of the rope of is a ring  $R_s$ , of larger size than the diameter of the connects it with the rope passing beneath the bucket, by which the latter is upset, the bucket being swung by ears upon the sides, so that it through this pulley block a rope or line O passes through a guide sheave P above the ducket, and thence down the hook or link Q, which abort distance from this point of attachment a bulley block A is fixed in or upon the rope, and point where the other rope M is attached.

back and the lines again attached to it, temporarily detached from the suspending line Q, so that it may be run forward or aft in the bold to be loaded, after which it is brought bas blod edt otai berewol tern si tesbud ro dut L gair ring J. The operation will then be as follows: The both off att a tribe both of the both of the

SCIENTIFIC PROGRESS.

The Three Forces-Physical, Vital and

[Written for the Pazsa.]

We attach great importance to the bearing of our least page of the property of the coessity of our least of the coessity of the coessity of our least of the coessity of our least of the coessity of the coessity of our least of the coessity of the

At Bessard has a Lubricated to the Compose seed to the Compose some interesting facts with reference to Rendus some interesting facts with reference to grease for the indication of machinery. The conditions such grease should the liftil are:

It should be sufficiently fluid to penetrate, to all parts of the beatunder slight pressure, to all parts of the beatings to be indicated, but it must not exude amount of pressure, its melting point must be sufficiently low in order that a moderate amount of heating in any bearing (60° C, at month of the control Стеале ал в пртісапі.

TIN GAUS.—The manufacture of tin cans, made for packing fruit and vegetables, is receiving the attention of the Knights of Labor in Parl all adelphis, who have issued an official circuits declaiming against the "chaeps and deleterious liquid fluxes used in machine soldering," while handeness alone are pronounced while hand-made cans alone are pronounced worther of Kwor.

LARGE PUMPS.—Some of the largest siphon centrifugal pumps ever made are now in use in receising lands along the Sacramento and San Joaquin rivers. These pumps have a capacity of as,000 gallons per minute at a lift of I feet 7 inches, the engine being of 156-horse power. The coal consumed is 4.10 pounds an power.

PAPER DOORS are coming into use, and, as compared with those of wood, possess the adcompared with those of wood, possess the accompared with capter before and great stamped and molded into panels, and then rolled through heavy rollers. After being covered with one that is fireproof, they are painted, then with one that is fireproof, they are painted, then with one that is fireproof, they are painted, wanties of the manal way.

three have died. Some of the others are so seriously burned that their condition is very precations. The explosion is almost unprecedented, from the fact that the ince modes have forecondition from the ladie, or about three-fore control and the entire contents, the was caused by some body burned. It was caused by some body burned in taking the wrong ladie. The company has a sufficient number of ladies to internal their part has a sufficient number of ladies to internal their part has a sufficient number of ladies to internal their part has a sufficient number of ladies to internal their part has a sufficient number of ladies to internal their part has a sufficient number of ladies to internal their part has a sufficient number of ladies to internal their part has a sufficient number of ladies and some l

MECHANIGAL PROGRESS.

A practical mechanic, who can write as well as work, furnishes the following hints, among others, in regard to learning to be a mechanic: The skill necessary to draw a file straight is not easily acquired. Many a weary half-hour at nonnings and early mornings I have spent in at noonings and early mornings I have spent in straight edge; but the trained muscles at last straight edge; but the trained muscles at last responded to the desire for atraight lines and filing. Learning to be a Mechanic,

presence were the control of the country of the cou

A Moverer Learne, one of the finest and most powerful tools that mechanical science most powerful tools that mechanical science has yet achieved has just been thished at Mularrer Learner and the schieved has just been thished at Mularrer Lies, which is a complete maring the universal lathe, which is a complete maring the most partied operations—such as mortisming the most varied operations—such as mortisming the most varied operations—and moding—with the most perfect scenarsy. It is wonderfully supports, of the delicate and complicated working of pieces for armor splating turrers, of helix into for modern war vessels. Its weight is more than 340 tons, and it is driven by an engine of the most perfect war vessels. Its weight is more than 340 tons, and it is driven by an engine of the most proposed in a cone of 76 tons, which was a mechanical marvel some 55 years ago, gives a striking illustration of the almost inoredible progress of our generation.

The Waste of Eugener in the Stram Ever fully learned his trade.

Alanchester (Gathrie, in which the writer observed the served that, in order to be steam engine, we were controlled to the seam engine, we were controlled to the steam engine, we were controlled to the stage of the steam engine, we were controlled to the stage of the stage o

Singular Expression of Molten Iron.—A serious accident recently occurred in the converting department of the Union Steel Works, while heard-made cans alone are pronounced follows with the Union Steel Works, while heard-made cans alone are pronounced fingular theory. The Unreasy planting of the molten were the ladie, and a large quantity of the molten were the ladie contraction.

STEEL, when hardened, decreases in specific gravity, contracts in length, and increases in diameter, The polar position of the sun has not yet been exactly located. Its approximate polar point among the stars may be assigned, but it is of no value in astronomical work, and is not mentioned in books.

ene law?

A memoir on "The Theory of Matter," by
Robert Leslie Ellis, concludes with the following sentence: "I venture to predict, with a
communicate to many, that if we can succeed
in establishing a mathematical theory of chemistry, it will be as much conversant with equations of the third or a higher order as physical
astronomy is with equations of the second."

to the coordinates a satisfy the equation of the ourve, and therefore they truly belong to it. When you are the coordinates a satisfy the equation of the court, and therefore they truly belong to it. When you are the continued as the continued

#### USEFUL INFORMATION.

PHOTOGRAPHY IM COLORS.—Whatever the failures beretofore, colored photography seems tow to be an accomplished fact. It general now to be an accomplished fact. It general now to be an accomplished fact. It general new to be an accomplished fact. It general negative of the sitter on a sensitized plate by negative of the sitter on a sensitized plate by negative a referred in the negative a color of the self of a solar camera and a spectroscopic arrangement. The image is produced on a chemically treated besit by the sid of a solar camera and a spectroscopic arrangement. The image is produced on a chart the sid of band, work or brush. The colors, it is stated, are all hydrocarbons, specially prepared and capable work or brush. The colors if the image is completed by chemical action, the image expension of suddivision to the control of suddivision to the control of the chicken to far inch in thickness. The productions are presented by preceded the colored pictures. The control of suddivisions of the productions are not be accertained the productions are one upon them. It is said that the natural permanent, light and climate haring no influence upon them. It is said that the natural conce upon them. It is said that the natural permanent, light and climate haring no influence upon them. It is said that the natural permanent of the productions are not be produced in all their richness and variety with the greatest case and perfection.

Mexicoan Pares Piranes. All noh interest has been seidly with the greatest and periested been excited in Mexicoan Pares.—Mich noher been excited in Mexico in the processor for been excited in Mexico in the processor of which conversion of the maguey, pits and other plants on money have made to which and the mague brees parts have been made to yield a fiber of such excellence that a permanent market therefor has been essured in the United States, thus adding an important to the growing foreign trade of the expert to the Mexicon Franct of the Country. "In last," says the Mexicon Franct Crief, "we regard the new discovery of the Country. We regard the mew discovery of the Crief Mexicon Franct Crief, "we regard the new discovery of the Gardivstants. Though good it is is not equal to Whipe have just received some pits floor from the fiber from the fiber obtained from the same plant by the process to which we have alluded. The Indians process to which we have alluded. The Indians the process mentioned, would have been much soften and of a silty character."

The Restorance of the property of the property of the provided by a defected by never be need. The lead may be detected by adding a colution of loided of updessions to the may be detected by adding a colution of loided of updessions to the colution of loided of may be formed. The very best hair restorative is made after the following formule: Take a two ounce vial, fill it three-quarters of the remaining space with glycerine, and the property of the remaining space with glycerine of water. The soid and glycerine search a beathfull influence on the soly while the latter keeps the laid and glycerine search a beathfull influence on the soly of in the latter the sold in the latter feeps the hair soft and glycerine scaret a beath while the latter feeps the laid on the latter feeps the same sold the latter feeps the laid on the latter feeps the same sold formula the latter feeps the laid on the latter feeps and glycerine search beath of the latter feeps the latter formula the latter feeps and placed on which and complexity of the latter feets feets of the latter feets of the

PLATE GLASS is gradually supplanting the largest sizes of window glass, as it has been the gradient of gradients, as it has been the count possible to graind it down to a small thickness. It is now unade three-sightly conditions the control of sizes is fully once-sightly incidently. While double-ships six the leer, is often to sheet-glass is that it has numbers of spots burned into it in the leer, is often of about a space of six place-glass is often in the part of the cost of their product nearer that of sheet-glass, so of their product nearer that of sheet-glass, so that the cost is becoming less a consideration.

American departments of the other of the other of the considerations. According to the constant of the constan

PUTTING ON VENEREA.—A new method of securing vener to its base consists in spreading gine or other adness, passing the two secured veneres and the base, passing the two secured parts under a heated roller to melt the glue and canse it to enter the pores of 'the wood,' then then the passing the connected base and the vert mader under obiller to harden and set the glue, and prevent the warping or shrinking of the years of the warping or shrinking of the years of the glue, and trying of the glue.

An Anti-Insect Fabric has been patented at Mew York which is intended to be used for lining trunks, etc., as a protection against the raversead of nother insects. The fabric is prepared by sonking it in a solution of tobacco and easearills bark macerated in benzine. It is then dried, and again steeped in tobacco, osecatills bark and stain steeped in tobacco, osecatills bark and bot water.

The Angueurs were acqueinted with seven metals which they supposed to possess certain mystic relationship with the planets, and were represented by the hieroglyphics by which the planets were known. Gold was called 801 or and the sun, Mars; lead, Saturn; copper, Yenus; tin, Jupiter; mercury, Mercury.

It is this pitcous and despairing wail from a forcested a pepers with a new and a shorthing the concert-beds and hospitals that invests the series in our city a specialist who has a possible beyond all dublication the fact that there is an array of avidence, placing from the fact that there is an array of avidence, placing one; including the concert of the concert

vulgar origing. The fact is, nature disabendation that had she had a worker.

Just is is and the fact is, nature loves to drop pearly in the fact is, nature loves to drop pearly in the fact is, nature loves to drop pearly in the fact is, nature loves to drop he conditions.

Just in the short pinches, and there is a professional acceptances condescending to adventise out the drop of the condition of the conditio

Ingrowing Tornaria.—For that very paintal the foreing in lafection, ingrowing toened, the angular description, ingrowing toened, the application of tennin. One who has had been advocated is the application of tennin. One who has had been advocated in the set parts around train and part and the set parts around not seed colution (an ounce of parts around the set of the tenning the set of the se

GOOD MEALTH,

Can Cancer Be Cured?

We have been deeply interested in the serial papers that have appeared from time to time in the that have appeared from time to the fact that we have such distributed from the fact that we been so peculiarly our under the above caption. The fact that we be that a product of the such that the fact that we have been a marking from this letter an are average out to six of the comes the that are the fact out old friend ex-Speaker W. H. Parks, after intense euflering for three years from a cancer out the fact of the fact of the same way.

Hearles, after income and excepted with the ware years from a canoer on the facts, after income and excepted with the ware wars.

There can hardly be a doubt that cancer is fearfully on the increase. From the report of increase was 327. Though we have no statistics of the location of the increase of 248. From 1870 to 1872 the annual increase of 248. From 1870 to 1872 the annual inclined to admire this disease is alterningly on the increase in the United States.

It is now that this disease is alterningly on the increase in the United States.

It is not a different choracter of the country; the increase in the United States.

It is count to be more prevalent in the country; the increase in the United States.

It is considered in France among the proportion of cancer in France among the sease is about 106 in 1000, per cant of the proportion of cancer in France among the seam poor classes is about 106 in 1000, per cant of the lates in the Parent in France among the seam of the sease in the appropriate of the properties and the sease in the appropriate of the properties of the properties of the parent of the sease in the december, the sease and interest of the sease, in the Parent of the sease, in the Parent of the sease, in the Parent of the sease, in the wholly under the sease, in the sease of the sease, in the sease of the s

tios.

Hospital has had great oppon our vital etatisal has pade to the West London beauty of cancerous patients. In a paper constituty of cancerous patients. In a paper constituty of cancerous patients. In a paper constitution of cancerous patients. In a paper constitution of cancerous patients. In a paper constitution of cancerous patients and cancerous patients and cancerous patients and cancerous cancerous cancerous cancerous patients. The leaves the cancer cancerous patients and cancerous cancerous patients. The leaves of cancerous cancerous patients are constituted to the cancerous cancerous patients. The cancer constagnes are constagnes. It cannot be caught nor given. But if it be true from the cancerous constagnes and consequent. It is not infectious or contagness the fasease any micro-organisms or getnes and consequent. It is not infectious or contagness and consequent partness are contained in the page and the cancer to cancerous persons of one propagate the disease. It is a not infectious or contagness and consequently is bat to seem at consequently is bat to clear the cancer to the cancer to cancer to cancer partness and consequently is bat to clear the cancer to cancer and consequently is bat to clear and consequently is bat to clear the cancer to cancer

and consequently is hard to classify in terms of a streams persons in the most vigorous healts, and commentary on our boasted healts can as and commentary on our boasted healts as a sed commentary on our boasted hears thousand years, that this disease is still classed ing set, with his trioh baritage of nor word learned among far increase. Many of our most learned and widely experience of the physicians confess they have no faith in any known remedy, and be not set of the conference of the con

Monterey County Mines.

A correspondent of the Salinas Index, write-ing from Alder Creek, Les Burres district,

Thinking it might be of some interest to your readers. I betewish send you a few items in restant to our mines. On or about the 17th of persish send you a few items in respecting willy Ornithenath, Jr., was prospecting up Alder orsels, finding gold in mearly serving and all of a sudden he could not obtain color. Hetracing his steps to the place where he last found gold, he dug down and unvolved he last found gold, he dug down and unvolved a vein of gold-bearing quartz four cook home with him, he pounded it out in a horbeaterly and they located 500 Maker to his discovery, and they located 500 Meiker to his discovery, and shey located 500 Meiker to his discovery, and shey located 500 discovery and son she with the man southwesterly direction, claiming the plucesterly and son southwesterly direction, claiming all dips, spure and angles, are successing all dips, spure and angles, wood, water, etc., and oalled it

The Least Ohence Mine, etc., and oalled it make his 'pile' on to fit of the least Ohence Mine, the lies overer declaring that it be did not put his 'bile' on to fit he would never again the his pick in the ground. The fast strike on the loss of the least Chanco was in very small veins range by from one to four inches wide, but increasing in width as they went down, until at a safet of seed a litind vein was developed, oonstaining gold plainly visible to the open, on the loss of the degrees. The contributes at a salete and porphyty formasion. As water because a salete and porphyty formasion. As water because a salete and porphyty formasion. As water because the contributes at the condition of the degrees. The contributes at the condition of the manner and the contributes of the meantime they had to true the contribute for teburns, Willy Crinkabank out down ing. I am from a tree to the meantime the species of the meantime the contributes of the meant of the country of the contributes of the meant of the meant of the contributes of the meant of the meant of the contributes of the contributes of the meant of the contributes of the con

aix tons of this oless of ore in sacks,

The Mammoth Mine,

Jowned by Cruikshahl, Walker & Murray, is

Joo teet in length along the lode, and 325 feet
wide, running parallel with the Last Chance.

Wide, running parallel with the Last Chance.

The Mammoth has not yet been prospected,
but surface indications point to a large deposit
of gold-bearing quartz. It it should prospect
pay the National debt and have millions to
spere. Adjoining is

Bur little prospecting has been done upon it
It is owned by Capt. Tidapall Mine.

The Tidapall Mine.

But little prospecting has been done upon it
found in the rock, Men will be at work upon
it noat week.

It is owned by Capt. Tidapall and J. D. Hall.

Jen, Mall and J. D. Mall and J. D. Mall.

Jen, Mall and J. D. Mall and J. D. Mall and J. D. Mall.

Jen, Mall and J. D. Mall.

Jen, Mall and J. D. Mall.

Jen, Mall and J. D. Mall and J. D. Mall and J. D. Mall.

Jen, Mall and J. D. D. Mall

The Manchester Mine

The Manchester Mine
Is a southwest extension of the Mammoth and
Tidball claims. The northeest end terminates
in a beautiful flat, which is a good place to
acmp, and the only level place anywhere
around. It is owned by W. T. Fleming, C.
W. Sanders and A. Manchester. They are
now down 25 feet, showing a ledge about one
foot thick with plenty of gold visible to the
steed eye. The rock is expected to pay from
naked eye. The rock is expected to pay from
selected specimens go as high as a dollar to the
selected specimens go as high as a dollar to the
pound.

The King Mine

It is strated about three-quarters of a mile down an almost perpendicular hill from the Manchean genedicular hill from the Manchean described by E. McCormack, and cheeker. It was located by E. McCormack, and which Mr. Ridgely is superintendent. They wot lots of placer gold in the ravine, but have not struck it yet in the ledge, although they are going for it as rapidly as drill, powder and plot can do the work.

A report has reached camp 'that a company of aix men have made a rioh strike about a mile from the King mine.

Men are coming and going here all the time.

Considerable prospecting is being done, and a large made a may strike about a mile from the King mine.

The Driven-Well Parky.—The Supreme Court of the United States, in a case which has been in littlegation L4 years, has declared valid Green's drive-well patent. The patent has run out meanwhile, but the decision gives the out the ears of the patent has the right to recover a royalty of \$10 on every well driven during the life of the patent, where the royalty has not herefor from 300,000 to 500,000 driven wells in the country, whose owners will become liable unpatent and the patent as famous for thirs decision. This bas been safent and the payment of royalty has been fought in every possible way. The decision of rought in every possible way. The decision of supreme Court establishes the tangible of the payment of the p

REOPENED. — Chronicle, July 30: The Mt. The Mt. The Melba quartz mine after being ide for seven years machinery having is being reopened, new steam machinery having been provided, and the water is now being pumped out of it. When closed down the shaft had been und it. When closed down the shaft had been the count of it. When closed down the shaft had been the count of it. When closed down the vein ranging from the count of it. When closed down the vein ranging from the count of it. When closed down the vein increased in width, bearing and producing very good rock. As the count of the Lee Matthews mine, the paying mine, it is proportionate quarter to a proportionate quarter of the Lee Matthews mine, near meetal. It promises now to be made a permanently paying mine. The California Cracker Co. of San meetal. It promises now to be made a permanently least Matthew mine, or San francisco, and resumed prospecting work upon it. For you do not not be cert down the vein, which has been opened for geet down the vein, which has been opened for a depth of 130 feet, averaged a little over two feet to a depth of 130 feet, averaged a little over two feet.

The Mean of the West Person.

West Branch.—Chico Entreprize, July 30: The mises on the West branch of butte creek are yielding well. All that are being worked several are placed digings, yet there are being worked set present are placed with foreign being digings, yet there are being worked several are placed digings, yet there are foreign of the control of the ground are from 3 to 5 feet which crop out of the ground are from 3 to 5 feet which crop out of the ground are from 3 to 5 feet which crop out of the ground are from 3 to 5 feet which crops out of the ground are from 5 feet which crosses. Magnets are found in some one one. They are but 1 km miles from 6 feet for the crough quarts, and as these lodes cross old the rough quarts, and as these lodes cross old the rough quarts, and as these lodes cross old the rough quarts, and as these lodes cross old the rough quarts, and as these should in some foreign of the rough quarts, and as the set of the set of the feet reken from the country of West Point are paying well, besides and tenoved to the mire. The will running at the well pesides of the running at Railroad Flat for some time on rock from the owners are placed with the outlook. Partles from Grass Valley are putting up chloring the workes at Rulmo's old aswamill, near West Went from the lones mire. Wet guich, has been reten from the owners at the mires in the workes at Rulmo's old aswamill, as the coultook. Partles from Grass Valley are putting up chloring that vicinity, as the sulphurets can be outlook. Partles from Grass Valley are putting up chloring that vicinity, as the sulphurets can be outlook. At the owners are placed with the coultook. But on the crop of Mining up chores, At the country of the country of West Point are supplyed. At the crop of Mining and Enchantes and Enchantes and Enchantes and Enchantes and Enchantes and Enchances. At the country of the country of the country of the countr

Alameda.

MATURAL GAS.—Livermore Herald, July 28: Last summer the Alameda Occurging Signs of Sea, on Livermore Herald, July 28: Last summer the Alameda Oil Company sunk as a well to the deeph of Sea, work will in the work of Sea, work will on the object plant and object of Sea, wolk will not obtained on the sea stready collects are many springs in the valley from which gas build secapited work was suspended on the sea submitted sea to make the sea of working up the sea of working the sea of working up the sea of working the sea of working the sea of working up the sea of the sea of the sea of working up the sea of sea of the sea of the sea of sea of sea of sea of sea of the sea of sea of sea of the sea of se

CALIFORNIA.

The following is mostly condensed from journels published in the interior, in proximity to the mines mentioned.

MINING SUMMARY.

Los Burros de Gold Mines.—About noo claims
Los Burros Gold Mines.—About noo claims
are engeged in prospecting; considerable work is
also being done. Cruiksbank is now down 30 feet,
is not bothered much by water, and bis ledge bas
is not bothered much by water, and bis ledge bas
asserts his rock is yielding gitto to the ton, the tailings being saved so as to be ready for a stamp-mill
anger being saved so as to be ready for a stamp-mill
ings being saved so as to be ready for a stamp-mill
ings being saved so as to be ready for a stamp-mill
to one is put into untining order in the future. One
thought and the stamp of the solution of

Monteney.

Slack's Canvon.—San Miguel Messenger, July 28: As work progresses in the tunnels of the Slack's Canyon coal mine, faith in the existence of slack's Canyon coal mine, faith in the existence of slack's Canyon coal mine, faith in the existence of increase. From to to 15 men are at work continuing, ally, and tools and material are forwarded as fast as ally, and a machine for foreing air into the tunnel is preve to be what it now appears, it is probable that another year will witness the development of a new prove to be what it now appears, it is probable that another year will witness the development of a new too to the tunnel is and adding transportation. Should this mine thousand the man and adding greatly to the property in our vicinity, supporting a large population and adding greatly to the property of the

Monterey.

Lake,

OUICKSILVER,—Clear Lake, Press, July 30: The
Bradford quicksliver deposit, discovered about 1/8,
years ago, is being actively worked with a large
Knox & Oborn patent, are tuning out about 30
Raske of metal per month, reduced at \$375 per 64y;
37 men are employed in and about the mire, change out about about about so the search of the search of

mining camp.

RICH STRIKE.—Index, July 27: A party of Mexican miners have found a splendid tedge above and between miners have found a splendid tedge above and between the Kestrarge mine. It is a big one, and the croppings go structor the ton. The national debt is a small matter in comparison with the county. Evergy and capital are all that are tequired to develop it.

PROCRESSING.—Mr. Molver informs us that work profit of which he has charge, is progressing favorines, of which he has charge, is progressing favorines, of which he has charge, is progressing favorance, of which he has charge, is progressing favorance.

hibition with Thos, Alderson a stripe chunk of rock which contained about 500 in gold, picked from the tailings of an abandoned mine.

Treamo,

Tre

A DOTAGO.

m width, and the rock taken to Hatris' quartz-mill at Sandy gulch, yielded \$17.50 a'ron. Sinking bedown the ledge became natrower, until at the depth of 130 feet it had pinched to about eight inches in width, although the rock averaged as well sinches in width, although the rock averaged as well some well and the control of the rock are sell and the control of the rock are a sell and the control of the rock are a sell and the rock are sell and the rock are a sell and a

Vanturea.

Vanturea.

Versible Press, July 30: There are now about 75 miners in this district. Several dry weaking machines are at work in the placers will as a forth of the foreign and placers will be success. A new mill is to be put up adjoining the Esparanza. Mr. Menzis has a tunnel joining the Esparanza. Mr. Menzis has a tunnel in Earl Monday with a load of ore to be put on exhibitor. It is the opinion of the old settlers here that there will be a lively camp here in a short time. Sharta Paula.—Prof. W. A. Goodyest of the Sea Kining Bureau has been stopping in our town for the last four days and has made an examination of the oil wells on the Ex-Mission and Ojsi, prepara-OPHIR.—On the 1300 level have resumed sinking wince Mo. 1. On the 1465 level the south drift has tracted and repaired to the south line. Extracted 13 tons of ore.

Belimont District.
Miving Mores.—Course, july 88: The work of Miving Mores.—Course, july 88: The work of SIERRA MEVADA.—On the gso level east crossout No. s, started from the main north lateral difft opposite west crossout No. 9, was advanced 65 feet; total length, 508 feet. The face is showing clay mixed with portphyty. The formation is soft vein porphyry and clav.

MEXICAN AND UNION COMSCUINTED.—On the top of the class of the

Venture.

Famee for its development with the abundant waterpower which is found near the mine.

SOUTH FORK.—WARE PARES, July 30: Great serial; with a brilliant outlook, is reported in this district. Many mines have lately been bonded, and self-dozen mines, and more is being sacked and will be abled to self-dozen mines, and more is being sacked and will be abled to self-dozen mines, and more is being sacked and will be developed to the being sacked and will be developed to the common self-dozen mines, and more is being sacked and will be well being so well being sacked and will be well being sacked and will be well being sacked and will be well being sacked and well being sacked in walls of these one of well being sack which was down to leet, and they are now extraction of the well being sack which was down to leet, and they are now extraction and well being sacked in the being sack per contring some of our most valuable mines, in guickly securing some of our most valuable mines, and will soon he shipping from the Ohios and Beillow. Use any per tool to pay have sold to Bell bros, to shipment is guickly securing some of our most valuable mines, in the stanp to make it boom. Large quantity of the different mines and have laken out of such discipance of shipping some of our most valuable mines, and will put in a reduction plant and the sack being some of shipping one has being some of our work our other or the sack and being some of sond well and well and well and well and well and well and

A PEOMISING ENTERPRIER.—Course, July 30: Alexandrian and San Bernardino.

Ban Bernardino.

Alex, Del Mar, engineer and superintendent for the Holcomb Valley Gold Company, and John A. Metholomby Valley Gold Company, and John A. Metholomby Valley Gold Company, and John A. Metholomby Valley Gold Company, and John Valley Gold Company. This company This company are secured the gravel beds in Holcomb valley for the company. This company secured the gravel beds in Holcomb valley where in early days many placer miners were at suspended there several years ago, because the water, and after reading series of the miners are pended there several years ago, because the water, and after reading series bed for the miners is the more reading series of the miner suspended there several years ago, because the could sink no further, and here the fact that he miner is that in the fact of the could shall be incompany can reach bedock they will be rewarded company can reach bedock they will be rewarded from any state of the basin, a deep cut will be based by the waters from the gravel and here the pumping machinery will be used. This suffice shall be deeper the fact their basin, a deep cut will be found the fact of the passin, a deep cut will be found or the basin, a deep cut will be safe for the confinety will be used. Should wise say of the entire body of gravel.

Ban Diego.

Ban Diego.

Jins suffice courned about a week ago and the dedge for the degree of the despired, with a since broadened to four feet wide, with a great since broadened to four feet wide, with a since week by and the edge of the ending of general water.

In such a such a solution was a solu

"MORE WATER.—Transcript, July 29: The AuMORE WATER.—Transcript, July 29: The Auburn and Best river canal, which supplies water for
mining and integration to the country, is to be enlarged from its
portions of Placer county, is to be enlarged from its
present capacity of about 600 inches to accondingly.

The country is to be enlarged from its
and at Anburn a reservor is to be constructed,
and at Anburn a reservor is to be constructed,
and at Anburn a reservor is to be constructed,
bein with a security of a proper ore bave settly

Thy creek, wor not brins of topper ore bave settly
been struck. The ore is of a grade that will pay
been struck. The ore is of a grade that will pay
well even at the present low prices of copper.

Graver Thinke. The complete at the submyside
and driting. Evidently the mine is paying, but the
parties working it are rather non-communicative,
and driting. Evidently the mine is paying, but the
starford that he has about reached the pay channel,
parties working it are rather non-communicative,
and driting. It is said to pay, West Carthoo, Thoo,
only a few hands are employed at the Sunnyside
mine. It is said to pay, West Carthoo, Thoo,
only a few hands are employed at the sunny channel,
and driting a pay other in a very
scare to to a pay other on a large scale this year. Last year
and of operating on a large scale this year.
An which mine is a very
scare to the pay of a pay of any of a to a pay of a sunny side
and the communication in a very
scare of gold. He is working underd with
nuggets of gold. He is working underd with
such pay and a pay at any time.

San Bennelland By at any time.

San Bennelland By at any time.

San Bennelland By at any time.

MEVADA.

Washoe District.

July 31: On the 1300 olevel a could hill which consent his beginning the work of received were stated by a country of the 1300 olevel a could hill the work of received were forescent. We are a more by the consent of the more by the country of the 1300 olevel a could hill the Oppin 100 olevel was elasticed diff which connects the upraise with the Ophin 1005 olevel west consent to feet; total depth, 73 feet. It connects to feet; total depth, 73 feet. It connects a connect to feet; total depth, 73 feet. It connects to feet; total depth, 73 feet. The main north hill was advanced 35 feet; total depth, 35 feet. It connects to feet; total length, 85 feet. It connects to feet; total length, 86 feet; total length, 96 feet; total length, 96 feet; It connects to feet; total length, 40 feet; It connects to feet; total length, 40 feet; It connects to feet; total lingth, 40 feet; It connects to feet; total lingth, 40 feet; It connects to the conditiones on the conditiones of the conditiones of the conditiones of the feet; It connects to the length of the total lings of the conditiones on the state of the showed of the feet; but and the week, according to the states of the short place, wase sady one of a feet; total length, of the Eureks mill. The capacity of water in the capacity of the Eureks mill. The capacity of the Eureks mill, and 57 to tons and power and to feet; total length, of the Eureks mill. The capacity of the Eurek mills with the week, according to the total and the count of the count of Washoe District.

MEAVDY'

Mining Mores.—Courier, July 28: The work of development is pushed vigorously in the Barcelona mine at Spanish Belt with flattering results, George

S WAS EXCITICATE TO THE WAS TO A STATE THE WAS THE STATE TO THE STATE TO THE STATE THE

Tuolumne.

Tuolumne.

Tuolumne.

Tuolumne.

Work Resumen.—Independent, July 30: The old Lynch quartz mine is being opened by tunnel acrow in the leet wide and yields some good ore. P. J. Sullivan, manager of the property in se systematic manner. The Gold Hunter quartz mine, mill and water-rights, and will develop the property in se systematic manner. The Gold Hunter many others in the systematic manner. The Gold Hunter many others in this conversibip, he remained unproductive from many others in this councity, having been unfortunate good hands and it may be expected will soon come good hands and it may be expected will soon come in the footh. Many productive from mineral many others in the soon come good hands and it may be expected will soon come in the footh.

MINING MOTES.—Mountain Messenger, July 30: Busch, Deidesheimer et al. have purchased the Busch, Deidesheimer et al. have purchased the have had so and to some time. It will now be thoroughly prospected. A load of air pipe came thoroughly prospected. A load of air pipe came thoroughly prospected. A load of air pipe came from Aevada City, a few days ago, for Whitmey & Fost, to be used at their quartz mine, near the old Frank Beaver place. The last cleanup of the Frank-hin Com, and at their quartz mine, near the old Frank Beaver place. The last cleanup of the Frank-hin Com, and the frank with Levertal claims have been located near this one one-half of which is owned by Jones Bros. of Beekwith, and much prospecting is being done in the recently, and much prospecting is being done in the way of running tunnels at present.

streams in the neighborhood of the elisinz staked off the discrete and wood in abundance, these streams being sufficient to run large stampails with ease. The decider are found in a formation of slate and prophyry, and all run east and west, and right of vortices are found all over the country.

MORE WATER.—Transcript, july 29: The August of socioop briek, using crude oil as fuel instead burning and Bestrict street canal, which proper a specified success. A second burn and Bestri freet canal, which supplies water for the part of the supplies and the supplies water for the initial set of the supplies and supplies ane

NEW MEXICO.

sin, and a very good property. Borings are being made on Mount Carbon for coal, with dit prospecte of success. Wolvering Basin has developed into great activity this summer. The ore discovered is great activity this summer. The ore discovered is in silver, but it is a desirable smelting ore, and if a large body is opened up, the will make mining very large to the coal of the

The state of the s

DAKOTA.

THE HARMEY PEAR TIN VEINS.—Pionser, July 30: Though the exploitation of these veins has been delayed, there can be but little doubt that they early valuable deposits of tin ore. The gold mines, in Deadwood district are producing sifer the manner to common for several years past. The Father De amer Completed a new wood chute on the side of their open cut whereby the process of the side of their open cut whereby the process of the side of their open cut whereby the process of the side of their open cut whereby the process of the side of their open cut whereby the process of the side of their open cut whereby the process of the side of their open cut whereby the process of the side of their open cut whereby and are asking out ore the Ram's Horn property, and are asking out ore the Ram's Horn property, and are asking out ore the delayer of their ore the track of the side of the constantly extresting rich ore. Col. Daniel Tallon constantly extresting rich ore. Col. Daniel Tallon white of the Lon Hill statisting the side of the Central read of the side of the control of the control

great dump piles of ore worth from \$50 to \$150 per 1001. Our worked in the Howell emieter has yellowed by the home of Hassawamps of the water of Hassawamps is the fact of the state wall of masorny. It is a great wall of masorny is the considered his fall. It is provided with great wall of masorny. It is great wall of masorny. It is great wall of masorny is traited. It is provided with great on he fet out in the consequence of the late of the case, too feel for the money of the consequence of the fall of the wall of the consequence of the fall of the consequence of the fall of the consequence of the fall of omestic waster workes, the consequence of the fall of omestic state of the consequence of the fall of omestic where in the consequence of the fall of omestic state of the wall induce other capitalists to make the wall induce other capitalists to make the wall induce other capitalists to make the works desewhere in our fair Territory and reclaim and of the fall of omestic and the consequence of the forestory and reclaim over a good claim, with fine prospects in the control of the wall induce other capitalists to make the works desewhere in our fair Territory and reclaim over the control of the where the tunnel caved of mestings of the fall of the control of the work was done after the locators quit, they cannot now as an John Marshall have gone of the fall of the control of the work was done after the locators quit, they cannot now a semi-decest, and the cost of the fall of the work was done after the locators quit, about to be tun on the Utighthawk fedge. The About to be tun on the Utighthawk fedge, The About to be tun on the Utighthawk fedge. The About to be tun on the Utighthawk fedge, the About to be tun on the Utighthaw fedge of the fall of the part of the work was done after the

Ernat, the superintendent, is again on deck guiding googsteinnar. On Wednesday last Norris Broz. of Norris Broz. of Wednesday last Norris Broz. of Wednesday last Norris Broz. of Norris Broz.

work:

Work IN PROGRESS.—Silver State, July 28: The Paradise District.

Work IN PROGRESS.—Silver State, July 28: The Paradise District.

Work IN PROGRESS.—Silver State, July 28: The Paradise Mining Co. has seen it, owing to heavy prosecuted. For week ending July 14th milling ore produced and delivered to the mill—Paradise mine, 39,000 pounds; Wild Goose, mine, 57,500 pounds; Mild Goose, mine, 57,500 pounds; Mild Goose, mine, 57,500 pounds; Mild Goose, mine, 57,500 pounds, and cedirected to the milling and cedirected of the milling and cedirected to the milling paradise, \$45,90 so, who have seen and \$4,00 state, \$4,00 stat

before the snow flees.

ARAYMOND & Elly District.

ARAYMOND & Elly District.

AROUT Floche.—Accord., July 27: The work of sining the Raymond & Ely shaft is progressing rapidly, having attented a tepth of \$8 feet below the ninth level. Work still progresses at the Yuba mine to the entire satisfaction of all interested. The errection of all interested. The errection of all interested. The errection of all interested. The engine has been put in place and the pushed. The engine has been put in place and the pushed. The engine has been put in place and the pushed. The stille District.

Reveille, and the started works in the Burke with Salows-frame erected. Holsting will be started for the still and the started and the started started and the started started and the started working, together with some tailings, at the Gila will I They are making a good deal of money. Geo. It is also been supplied to start up.

B. Clark has put up a furnace at Reveille which he is ready to start up.

Walker Lake District.

is ready to start up.

Walker Lake Bulktriot.

Mouvr Corr.—Walker Lake Bulktrin, Aug. 3:

This mine is being setively worked and is looking
work.—More passes for the rumor that it was
to be closed. More miners are in set wanted, and
work. The concentrating plant will be crected in a
short time, and everything promises big work in the
mode in the raise from the rac-loot level to cuting was commonced on the soone time set on
the large body of ore that was found some time ago.

The raise in the raise from the rac-loot level to cut
the large body of ore that was found some time ago.

The raise in the ledge has steadily shown a better
mine,

cuting was commenced on the race-foot level cour in the race-foot level counting was commenced on the tace-foot level counting was commenced on the socoloot level counting was found some time ago.

The race in the race-foot level counting was commenced on the socioot level counting which is all work in the ledge has steadily shown a better mine.

ARIZONA.

Minuted Wortes,—Prescott Courter, July 30:

Smelters of United Verde will commence operations in the Monday next. More nately will commence operations in the Monday next. More nately to Group Creek and rich. The prescott commence operations in the Monday next. More nately as a shipped many prospectors have gone the Muddy, and Check More nately will yell a special to be a strict of the Monday next. More nately as a shipped many provered on Creek district. B. T. Riggs will both list stearing the gold one from Ben Monday next. More nately as a shipped many provered on the Monday next. More nately as a shipped many provered on the Monday next. More nately as a shipped many provered on the Monday next. More nately as a shipped many provered on the Monday next. More nately as a shipped many provered the shipped many provered the strict of th

HEAVY DEPOSITS OF GALENA.—Seaftle Press, July 30: Very DePOSITS OF GALENA.—Seaftle Press and season of the new camp of Metaline, near the British Columbia line. There is at that point more of this cer in sight not poof the ground than any person who has visited there has ever seen before, the ore, however, carrying only about eight ounces silver, and the conformation of the sanded from Sand Point, on the Mouthern Pacific railroad, by water point, on the Mouthern Pacific railroad, by water courses and a few miles of mountain itail. WASHINGTON.

#### .HATU

GENERAL ITEMS.—Courter, July 39; King & Casteel have rended some of their diggings on Forest asserts in Steinburghing theiring Ko. is asserted some of their diggings on Forest casteel have rended some of their diggings on Forest casteel have rended some of their diggings on Forest caster in Steinburghill edictice, and crusbing a good one. Herd, Mockee & Co. are running an asserte in Steinburghill edictice, and crusbing a good one, their house, the have considerable prospecting in quartz is still going on, seath a forest caster in Steinburghill edictic. The mine and a steinburgh a some castellar digging and their steatures at July ease barily engage of in general and a steaturgh steature in July on the Foots oreek district. The mine order, and will soon have them at work. They considerable prospecting in quartz is still going on, but gotter in the forest seams to be seen their as the steature at the steature at the steature at the steature and their steatures at the steature of the steature o

Outakto.—Tribure, July 90c. The troduct of the Ontailo for the week was 44 bars of builton, 35, 775.99 fine outcets, and 47503.79 from our sales, a profit of the dead of the

The Lucky Boy on Belknap summit is 1240.

The Lucky Boy on Belknap summit is 1240 ly 35-5. O. Smith's now employing nine men on the Matgaret group in the mine. The Fr. O. Smith's now employing nine men on the Matgaret group in the mine. The Kincannon aisotrate of a status of a fastile order is a bound of seek. The Kincannon aisotrate of a status of a fastile order is group, and a status of a fastile order is group. The continuation of the mine. There is a perfect a status of the continuation of the co ANATIOM .

SILVER LAKE COUNTRY.—Inter-Mountain, July Silver Lake Country.—Inter-Mountain, July concentrating works, miners and prospectors are concentrating works, miners and prospectors are finerestaing in the Silver Lake country, which is provided to the country which, when its but a vast belt of precious mineral which, when its report that this region is far wealthliter than was ever report that this region is far wealthliter than was ever producers, stands in the cable the current report that this region is far wealthliter than was ever producers, stands in the cable file source that such such that such that such a su

KOOTENAI MINES.—Victoria Press, July 31: The outlook for the mines about Kootenai akee is very encouraging. There are about Kootenai akee is victoria, all bown. It is a bowning galena croppings, while a dozen test of control of the continuously from the surface is about 12 feet, while a dozen feet, exhibiting ore continuously from the surface select to solid galena or control surface is the continuously from the surface select to solid galena or control surface is the control of the continuously from the surface surface

The Treadwell Company, the only one yet actually milling any over in the company, the only one yet actually milling any over in the country, continue their operations with the usual success, their two stamps being run advanced to the companies have development as a property of their companies have development of the companies have development of the contracted for, and probable successive them in operation this essent. The about the treatment of the contracted for, and properties, have mills contracted for, and expect to have them in operation this essent. The expect to have them in operation this essent. The expect to have them in operation this essent. The expect to have them in operation this essent. The castell and reported estimates—counting men employed, first interest on expense and reported estimates and probable shipped the contract of the ledge in the Lucky Chance mine to say, and it the quarts without the code to subable as ledge that it will be not report discoveries will be made, and it shall the their son to suppose that before the capital which has son to suppose that before the capital which has the company a thousand-fold for the capital which has been expended in opening the property. It will be company a thousand-fold for the capital which has poor to make to the read or suppose that before as ledge in the training which has been expended in opening the property. It will be company a thousand-fold for the easily which has make; for all that it seeded to convince oursiders will make the quarts deposits on the island are equal to the capital which has the company of the property in the capital which has the company of the results great on the results are equal to capital and paying operation of one mill.

BRITISH COLUMBIA.

COLORADO

## GLEGRAPH WIRE, HARD & SOFT COPPER WIRE, INSULATED WIRES OF IRON & COPPER, FENCE WIRE, COPPER, FENCE WIRE, CANEDISH IRON WIRE, COPPER, FENCE WIRE, CANEDISH IRON WIRE, COPPER, FENCE WIRE, CANEDISH IRON WIRE, COPPER, FENCE WIRE, CANEDISH IRON, W.J. & IN DRUMM STSAN FRANCISCO, CAL. RON & STEELWIRE OF EVERY KIND. ELEVATOR, TINNED, & COPPER ROPE, SASH CORDS. LARGEST WIRE ROPE WORKS IN THE WORLD. CALVANIZED SHIP RIGGING, MINING, TILLER, JOHN A. ROEBLING'S SONS CO

#### NATIONAL IRON WORKS

N. W. Corner Main and Howard Sts., San Francisco,

Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES. CASTINGS AND FORGINGS DOGGT EVERY and Quartz Mill Machinery.

IMPROVED PORTABLE HOISTING ENGINES.

#### NATIONAL ROCKER GUARTZ MILL.

KENDALL'S PATENT, AUGUST 24, 1886.

CAPACITY, 12 Tone in 24 Houre, 3 H. P. MARSHUTZ & CANTRELL, Sole Manufacturers,

The Patentee and Manufacturers cordially invite miners to critically examine and pass judgment upon this improved system of milling and amalgamating ores in the following particulars:

for The wear is less than one-que for the wear is less than one-que for There is no wear except shoes and dies.

A tha point of smelgemeaton it amperior to any other machin in use.

S. In is seimplicity of constructing the second in use.

S. In its seimplicity of constructing the second in use.

We challenge competition with Stamps, Ball Pulverizers or any other ove crushing machines now before the public,

MARSHUTZ & CANTRELL.



LIFE-SAVING RESPIRATOR

and Salivation. Entirely Prevents Lead Poisoning

JOHN TAYLOR & CO., Sole Agents, 14 to 118 Fine St. . . . San Francisco.

Reduction of Ores, Quartz, Phosphate Rock, Carbon, or -FOR WET OR DRY-CENTRIFUGAL ROLLER MILL

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-

THE FRISBEE-LUCOP MILL CO.

NEM LOEK

HOOKER & LAWRENCE, Gen'l Agents, Office, 145 Broadway, cor. Liberty St.,

EEISBEE-LUCOP

FROM 2 TO 100 H. P., ALWAYS IN STOCK

**ENCINES** Sug BOILERS

YACHT ENGINES.

SOLE AGENTS FOR

MACHINERY

**CHECORY** 

SUPPLIES AND

MITT

HOLLOWAY FIRE EXTINGUISH-BEADLEY CUSHIONED HAMMERS
MASSEY'S STEAM HAMMERS.

BEVILVED MITTING MACHINES

STURTEVANT BLOWERS AND

WEBBER CENTRIFUGAL PUMPS. BLAKE'S IMPROVED STEAM

REVIEW & CO.'S WOODWORKING

Cor. Fremont and Mission Sts.,

TURBINE WATER WHEELS.

SHIMER MATCHER HEADS.

SERIN BYND SYM BLADES,

BICKLOED'S POWER DRILLS. BEMENT & SON'S MACHINISTS CHINISTS, TOOLS.

NEW HAVEN MANUF. CO.'S MA-

LUBRICATING

OIF2:

NEM XOEK BELLING VAD BYCK-

Korting intectors and elec-

NATHAN AND DREYFUS OILERS.

SONTAL ENGINES, PAYNE'S VERTICAL AND HORI-

VAD BOILERS. VILAS ENGINE WORKS ENGINES

ENGINES' HOIZLING

San Francisco, Cal.

DISCLORES CHECKERS SPANS

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh At 300 revolutions per minute wet.

All wearing parts easily and cheaply replaced. May be seen in operation at the New York Metallurgical Works, 104 and 106 Weatington St., and Pacific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, furnished on application.



#### Metallurgy and Ores.

#### SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office. COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead 01es and Sulphurets.

BLUESTONE,
LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

#### JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GIVESANGE VAD SANDEIES' ELG CHEMICAL VEPARATUS AND CHEMICALS'

114-118 Fine Street, - San Francis We would call the attention of Assayers, Chemi Mining Companies, Milling Companies, Prospectors, to our full stock of Balances, Furnaces, Mulling ples, Societies, etc., including, also, a full stock Chemicals.

notise.

Our Gold and Silver Tables, showing the value per Our Gold and Silver Tables, showing the different degrees of shoneses, and degrees of showing the showing the state of the showing showing showing the showing showing

#### Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

Mear First and Market Streets, S. F.

С. А. Глокилярт, Мапаger. Отев worked by any Process,

Ores Sampled

Ores Samplect.
Aesaying in all its Branches, Maters, etc.
Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications furnished for the most suitable Process for Working Ores.

Mines; Plans and Reports furnished,
O. A. LUCKHARDT & CO.,
(Formerly Hubn & Luckhardt, )
Mining Engineers and Metallurgists. Special attention paid to Examinations

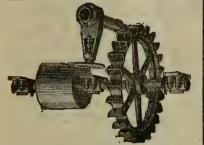
METALLURGICAL WORKS.

818 Fine St. (Basement.,

Assaying and Analysis of Ores, Minevals and Waters Mines Examined and Reported on Practical Instruction given Treating Ores by voed processes

Mining Engineers and Metallurgists

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED A by the Idaho Company at Grees Valley, Cal., and Jave 90 2 per cent, distencing all competitors. Send for Circulars and guaranced estimates.

L. A. PELTON, Nevede City, Oal Acanus Parke & LAOY, 21 and 28 Fremont Street an Trancisco, Cal.

INVENTORS, TAKE NOTICE!

58 Market St., N. E. cor. Front (up stairs), San Francisco, Experimentsi mechinery and sill kinds of metal, tin, copper and brass. L. PETERSON, MODEL MAKER,

## Mining Turbine Water Wheel. DAMES LEFFEL'S

Those Wheels are designed for all purposes where limited quantities of water and high heals are utilized, and are guaranteed to give more power with less water than the control of a power is transmitted direct to matring by holts, dispensing with gearing.

Estimates intrained on application for wheels specially built and adapted to expect to the control of a papelloud on application for wheels greenly to suit any particular one to obtain a process of construction, as well as the Yuther information can be obtained and in them Globe Cases, it see of cost, applying to the manufacturers.

1AMES LEFFEL & 00.

or 110 Liberty St., New York.

Springfield, Ohio,

FRASER & OHALMERS, General Agents, Ohicago, Ill., and Denver, Col.

PARKE & LACY, General Agents, San Francisco, Cal

## WINERS

Quartz, Gravel and Placer Mines!

**SMALGAMATING** 

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL PLATES

Fifteen Medals Awarded.

Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

658 and 655 Mission ST., SAN FRANCISCO, CAL. E. G. DENNISTON, Proprietor.

QUARTZ MILL, Hantington Centrifugal

send for catalogue 🥙

CORNISH ROLLS,

JIGS and TROMMELS.

ENCINES AND BOILERS.

This Mill as a Crusher and Thirton vival. To rival. Is in operation in lead-STURTEVANT MILL.

ing smelting works

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

HOISTING

ENCINEZ'

HYFFIDIR, 2

MIKE KOPE

TRAMWAYS.

MEXICO OFFICE: Mo. 11 Oslie de Jusrez, Ohlhushus, Mexico. No. 248 Eighteenth Street, Denver, Colorado. DENAER OFFICE:

GENEFAL OFFICE AND WORKS:

Fulton and Union Streets, Chicago, III.

NEW YORK OFFICE: 48, No. 2 Wall Street,

## HOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

which will be sent free upon application.

F. Our Catalogue of Practical and Scientific Books, 96

Mayes, 8vo., and our other Catalogues and circulairs, the
kies, sent free, branch of Science applied to the
Arks, sent free, and free of postage, to any one in any
part of the world who will furnish bis address.

ASSAYERS, CHEMISTS, ETC.

MINERALOGISTS, MINERS,

IMPORTANT TO METALLURGISTS,

'Samna

MACHINERY,

CORNISH

ENGINES

PUMPING

HENRY CAREY BAIRD & CO.,

Industrial Publishera Booksellera, Importera,

810 Walnut St., Philadelphia, Pa., U. S. A.

#### SHAREHOLDERS' DIRECTORY, MINING

di gint	25	mery St	328 Montko		C shorta A	SHACE KING M CO
II TIUL	90	mery St	03100M 825	olzitoM	CCalifornia	Russel Reduction & M Co.,
dl rqA	01		oganoli 825	V Letts Oliver	V Mevada	Paradise Valley M Co
7 1qA	10		Man Ich	dguoio H	Aairrol fcD.,.oC	Pacific Borax, Salt & Boda
10A	52	w York		*******	BigrolifeD	Plymouth Con M Co
1qA	13	3B staro	TileD JUP	azainast 🛦 (		Original Hidden Treasure.
91 VBM		mery St	oganoM 223	Wetzel		De. De. Blue Gravel M Co.
7 glut	03	mery St	toganoM e08	впэчен W	AsbsveM	Con California & Va M Co.
PAYABLE	,THUOMA	EIN B. E.	OFFICE	SECRETARY.	LOCATION.	MAME OF COMPANY.
	,SHTV	BEG MC	HI NIHIL	DENDS-M	ATEST DIVI	T
8 3u.A	leuma	mery St	oganom sze	······································	AL CO USIL. 2	South Feather Water & U
		mery St		. K. Durbrow	A EDEVON	Occidental M Co
at au A	fabeda	mery Sc	OBJUDIA PUC	J. Scoville	L sbays VI	Martin White M Co
0f 3uA	launuA		THEO RIP	Stadtfeld Jr.,	C abgradi	Julia Con M Co
	launnaA	ta sniT	018	W Pow	С врачэМ	Independence M Co
dl puA	leunnA		19 M	E K Cormac.,	T	Bine Jacket M Co
3f 3uA	lauan A	32 Vienz	oginoM 205	aoetaW H V	VsbavsM	Alta S M Co
. DATF.	MEETING	H 'S MI B	ORRIGI	SECRETARY.	LOCATION.	NAME OF COMPANY.
		·a.	TO BE HEL	EELINGS .	M	
Montgomery St		TI''D BO	Aug 30 Sep	72 glutet	California., 2.,	Venus M Co
134 California 8t		198 A 81 7	gua et glat.	.,e annt42	California., I	True Con M Co
Montgomery St		H A 62		.7 Vlu C 0d	Nevada	Savage M Co
48 emeanes occ.	19i198	F 19. F E I	Aug 26Sept	dl ylut 44	Isinrolt sD.0	San Francisco Copper M Co
Montgomery St	828 39 ii(	13. WL	dqsBel guA	II ylut 30	Arizona	Pinal Con M Co
38 Vistself 602	Tiller	TH 31 2	ո∆ ձՀ Վա.Ե.	.12 saut 32	IsbaveM	P J Keyes M Co
Montgomery Bt	308 × 30	21, D Bu	auA d auA.	.08 amul., \$2	sigr. lileD.c	Orleans Con M Co
18 Signoille St	al. blalth	B18 L., 8 30	198 el 3uA.	.df ylut, .80	2 shave M	Orleans Cun M Co.
Montgomery St		2 22 A K	MA 82 vint.		e sbaysv	Occidental M Co.
38 eni4 088	NACO	20" B K I	drag. Is and	Ju. July 21	8 abayaM	Morning Stat M Co
Montgomery at	Ск	S S S S S		dune 15.	S SDEVS M	Mocking Bird M Co
Montgomery St		30, 02 8		3 viut 32	Nevada	Mexican G & S M Co
Montgomery St		8 6T We		.dl anntof	C SIRTOILISO	Live Oak Drift M Co
Montgomery Sc		31. JEL	dusor Sus.	50July 7	PE. BDBYONI	Hale & Moreross M Co
Mortgomery St		ເສີວິເຮົາ	Aug (D Sup	.02 VILL02	PY BDBYS M	Exchequer M Co
Montgomery Bt		8 W. 2 3		.51 TML 50	4 18U 0U .	Cataract & wide West G M
Moutgomery St.	729	W. T. 08 2		9 VIU.C. OI	California 25.,	Champion M Co
Montgomery St.	юти309	t 21 L Oak		20. July 7.	California 3	Bulwer Con M GO
OE OF BUSINES	ECRETARY, PLA	SALE. S	DEFING, NA.	AM'T. LEVIED	LOCATION, NO.	COMPANY,
			SIMENTS	VSSES		
P. SOURREDOC .4	'S MENTO ONA SEE	WALLEIG ER			VA SKOW WDARKI	COMPLED SYSRY THURSD
TT. Dundi of	5		G VALICE	Af we outen true		

	Exchange.	S. F. Stock	
ni sols2	taefigiH bi	of Lowest at	Table

180	00.0	02"	69,	69.	09	1)7.	09°	North G. & O		
29	00 3	08.8	90.9	ā7. č	0¥ ¥	289	58.9	Nev. Queen.		
76	92.6	09'₺		FOT	₹6	OT	94.6	NOTED EIGHE TRIE		
0£,1	1,35	09.I	0₹°I	05.1	38, I	09 T	1.40	otavaN		
OH! X	00.4	1303		0110		34.		Merchern Belle		
4,25		00.4	-98'F	94°8		09.8	00'5	Mexican Mt. Diablo		
2.00		2.55		2.70		94 3	2.30	M.ono.M.		
			****	1				Martin White		
37.	04.	08.	02°	06	28,	T°02	06°	Lady Wash		
08.1	00,I	3,00	09'	94°E	00.2	00.2	01.1 28.2	natice		
97.	69.	08.	03.	38.	87. r	00. I	C/.	stlut		
1.20	00.1	1.30	00'I	04.1	1.25		ĞΥ.	Lows		
09.							****	Independence		
4.75 2.00	08.k	00,2	00'5	00.2	0710	00,2	****	RomoB		
29	67.4	8g		82.8	4.80	8g	90'5	Gould & Ourry		
				1444	00.1	2,10	09°T	Grand Prize		
38, I	1,25	09'I	31.15	1.80	3,.65	01.2	GP. 1	Exchequer		
				67,8	82,8	67.8	09'9	Елгекв Оод		
	****	GJ.I		02"		62.	****	East B, & B		
09°		0Ž-	99°	SŽ.	99°	97.	09"	Contral		
00 I	06*	OR. I	68.	ng'T	1.10	08.I	90'I	Orocker		
104	8,25		32.7	79 <b>7</b>	13	20	TOT	Отогов Роше		
99	GI.	02.	091	.30	62.	00 7		Con. Pacific		
3,00		87.8 07.	08.8	06,	37.	00.4	03.8	Con, Imperial,		
8,50	90.0	62.8	92 4	TO	00.6		8.75	Сопиденсе		
89	09.9	09.7	62,8	00'6	00.7		37.7	Опоцыттыпопо		
09.2			OT 10	07:0				Champion		
16E	121	UI.E	47I 39.2		21.2	08.8	2145	Challenge		
06	141.	ga*		1.16	1,00	CULL	00'1	Bulwer		
	• • • • •		**	1666				Bodie Tunnel		
96.I	1,30	2,40	68.1		2,40	2,20	01.3	Benton		
1,20	Ot'T	09.2	2,00		29 %		06.5	Bodie Jeie		
05.1	01.1	62.1	1.10		31.15 1.15	1 36 I	01.1	Baltimore		
01.2	26'I	99'%	1.80	2.55	08.3		C. 4.2	Bullion		
49	0019	7.50	89	8.25	7.25	00.6	00 2	Eest & Beloner,		
00.8	02.0	80						arophy		
0₽°	<b>32.</b> 9	§6	08.8	0₽. F2 F	00,6	₩.	δξ.Τ čT.Τ	Вејсрег		
1,35	1.25	06,L	1.25		09'1		05 E	Andes A		
32.2	01.8	2.40	2.10	2.75	SP. 5	3,00	04.8			
04.40	4.25	4.75	3,60	00.8	08.₽	60.0	00°₽			
7 2	du A	*87	an	IZ.	me	'ST A	լալ	COMPANY,		
DNIC	ENE	DNIC	HME	ONI	ENDING END		EMI	ZAT GROU		
HH	W	HH	H.W.	EE	AA.B	EE		MAME OF		
_				-						
D. F. DEUGK EXCITAINES.										

# 06 † \$\frac{1}{2}\$L 08 † \$\frac{1}{2}\$8 09 L 5 6 \$\frac{1}{2}\$9 2 L 1 6 2 E

1	
Toman server as a server as a server a	OZO IŽOTITITITITO EVOLUTE OC
Yellow Jacket 54@54	50 Епгека Соп 63 620
Utah1.80	350 Exchequer1.25@1.30 550
Union Con3.25	100 Crocker
Trojan	140 Confidence7@72 400
Dierra Mevada4.40	062 Crown Points
U. P. P abave M. srreid	COE TOY MEET TRO TO BE A TION COC
Potosi	130 Chollar55@6 200
TOTAL TRANSPORT	600 Brophy35c 290
Очеттап1.9	000 Part Spart State Office Of
o Constant of the control of the con	100 Benten Con1.5@1,20 200 200 200 Belle Isle15@1,20
85)48. Tiula()	100 Benton Con1.95 420
89/8slelle Is.	450 Bodieaiboa 062
Nev. Queen54@54	200 Baltimore
25. F(0)(05. A. 30(0)4. 35	065 (40%)40
Кептиск, 3.00	OC US, L ROLLIDA UCC
oco	200 To or Trefferent 18 To or or
no · · · · · · · · · · · · · · · · · · ·	300 B. & Belcher
Male & Nor4.10	300 And 200
OIL b YOM A GIRH	380 Alta 2.15@2,20 225
Gould & Curry at bluod	THURSDAY AUS. 4, 1887,   320
מסטומווצטי שיים אויים ווציים	COSTOTIVE AT TIPE AN SOTIE

#### npumentary samples

Persons receiving this peper marked are requested to examine its contents, terms o subsected to examine its contents, terms of successfully and give it their own patronage, and give it their or inculating the index forms, and extending its inflance in the faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon anough. If stready a subscriber, please show the paper to others.

Gold medals have been presented to Lorenzo Pinaglia, John Mollain and William Scadden for their services in rescuing men from the Gonld and Curry fire.

THE salmon nun in Alaska is as much greater this year as that in California, Oregon and Washington Territory is smaller than usual.

200	a stout a commit									
Market,	IstoM	Francisco	San							

23	1	UJ	v						o o o		m zerrerE
PE.	60	30				*****				& Co	Maylor
9	00	13		*****						VY391	Machin
9	(0)	P.		******							Plow
-	ão:	R				* * * 892	CTH ALT	BOLDON	ים מי ס	OHBIG	TRIBGE T
52	9	91							ar "ar	នាជនិបាន	-Taal
20		48								DIO	Flasks, TEEL—
-	8	90	T							TIEW.	Chilled UIOKSI Flasks,
_	ð	00	U.X				1 '398	пепп	fa-	LARK	1830103
-	ð	00	17					D - da		'on '	CHIRE
	a)		2							Stan of	Buck,
~		00	6	19-0	More		ma no	~ ma °	/nr nr	moner	D GODE
_	Ð	08	L	asd 8	i more		84 00	g uv /	POL 40	4 1 + 1 1	Sheet.,
-	9	8									tead B
=	9	gg	ä								Bar
		09								Dj.	I-diva.
21		61				100		124	8196	dS X	Ingot.
139		421									Ingot
_	(0)	6I								201	Bolt, .
12	<b>®</b>	GI			*****						. , sioa
	-									-	COPPER
_	<b>@</b>	00	08		· Spinis		Sport	,		No.	Shotts,
_	Ø	09	7.7		*****				hite,	M OUE	GP' TS
00	623	00	12		*****	****		*****	ton.	'21A	Oregon
m	0630	-	li ii	3 . 60.00			" TOS	"T "O!	ore' w	B II B	Americ
09	972	-							J	on to	Eglinto Americ Oregon Glay La
00	6200	_			*****	*****	*****	TO2 3	Thous	eSuer-	ANTIMO P. ROM
	(a)	96		*****			i	BAC U	тепс	X N	OKILNE
								-13 -T			
- 4	SAI.	\$ 5	741	A VA	авяля	14					
	1	0	-	to o	E'	EBYL	MHOL	A			
		-710	1.1	TTP TAT	T127	DIA	DOR	(d) III		1145	1

Trans.	.665.	\$10,50@1					
		:"31	t Repo	Marke	e granke	tal Ex	York Me
Men ,,	eut 1	mori lisa	p dy m	e lates	da Bi	gaiwoll	The fo
				46,	-23@g	HEARH-	Опск
				• 1	77.70	\$79°F\$	LEAD-
					\$55,00	No. I.	-NOAI
				.05		S-LAKE	
						ewis-	
				.ZO 790	95gc	LVER.	BAR BI
					:83	rk price	MOM XO
gaiwoll	the fol	by give	Yng.	dated			
	'19	W.ISTH	1230	OU W.I	OT /	MANT	

rable Notices (Lake) issued at \$10.650.0.65. Trans-rable Notices (Lake) issued at \$10.650. — Trans-rable Notices (Chili Bara) issued at \$40.85 Lean - Quiet at \$4.44. 4064.55 spo. Transferable No-Tive-Exaler at \$23.00.623.20. Transferable notices is-sed at \$22.95.

Prices generally ruling for motals not regularly dealt Prices generally ruling for motals not statement at the W. W. Exchange, covering statement of the W. W. Exchange, covering statement of purers' and sellers' news. All prompt delivery. Ausburgers' and sellers' news. All prompt delivery. But 600032 6003

#### New Incorporations.

The following companies have been incorporated, and papers filed in the office of the Superior Court Pepariment to, San Francisco:

PONDENE M. Co. Directors, Joseph M. Souther, L. P. Drexler, S. W. Fuller, Charles H. Fish and D. W. Douthill. Capital stock, \$10,000,000.

West Coast Electric Light and Constructors, Tion Co. Capital stock, \$100,000, Directors, George A. Newhall, Henry C. Hyde, George L. Henry C. Hyde, George L. Henry C. Hyde, George L.

Henzel, John Lloyd and Joseph O., Hursenteider.
PACIFIC CABLE CONSTRUCTION CO. Capital
stock, \$100,000. Directors. P. Oppenheim, who
George M. Pinksrd sind J. M., Thompson, each of
Wevada Citry And Grass Valley Exertric
Licht And Motor Companies. E. L. Campbell, William
Boericke, Charles F. Burrell, A. A. Osborn and A.
H. Clough, all of this city.

OUR FRIENDS can do much in aid of our paper and the canse of practical knowledge and educate in the can do much in aid of our paper and the degree in the can do much in aid of our paper and seemed to can see sufficient in their labors of can resemble, by lending their none decorate and amount and the can be can be can be can be called the can be called the can be can be called the cal

Looking After the Building Stone.

The State Mining Bureau has issued the fol-

William Irelan, Jr., State Mineralogist, William Irelan, Jr., State Mineralogist, William Irelan, Jr., Wandell Jackson, With the co-operation of A. Wandell Jackson, Professor of Mineralogy, Petrography and Economic Geology in the State, and to that end building stones of the State, and to that end building stones of the State, and to that end invites your active sasistance in procuring the necessary material. The report will cover a said-taken microscopical description based on microscopical axamination of thin sections; chemical composition where accessary; density; tests of properties for moisture and water; weathering properties for moisture and water; and general adaptations, the following material will be required for each stone examined:

The condens of none and one-half inches, edge to sughly dressed.

Two cubes of two inches, edge roughly dressed.

Two cubes of two inches, edge roughly dressed.

# Don't Fail to Write. Dealings in mining shares market. Dealings in mining shares during the week without being fairge have been fairly settive. The late break in the wheat market had a tendency to-make first what financial embartassment might ensure forthing, however, beyond a weak feeling for the Politing, however, beyond a weak feeling for the evanescent than was expected, but few loans on mining shares baving been called in. Latterly the banks have, in fact, been a little forthy should see the ing this sort of collaterals, wherefore the brokers have banks have, in fact, wherefore the brokers have share market became a little pancky, and a sharp share market became a little pancky, and a sharp share market became a little pancky, and a sharp share market became a little pancky, and a sharp share as the leading brokers stood in and given not been deeply indebted to these institutions. With the closing of the Grain Board, the mining share as a seeneral feeling of confidence in Comstook shares, the week closed without any market deeling from the seek closed without any market deeling shares, the week closed without any market deeling from proces. Deveryhing confidence, the tone of the market may be said to be bealthy, movements being lively without a tendency to overspeculation. Don't Eail to overspeculation.

Mining Share Market.

The following is an except from a communication by M. A. Woelkeff to the Societe decation by M. A. Woelkeff to the Societe decay and the sean over a great portion of the continent of the continent of the seen over a great portion of the continent of the meridian of Serlin, but the median for the seen from will be best seen from will be best seen from the continent of the meridian of Serlin, but the most two the canter and to the seatward of Ruesia, but the most favorable continents for observation will be in the violatity of distinct for observation will be in the violatity of the seast of Lake Baikal the colpassion of Mongolia and Mantehonuria, over a stript of the scient of Mongolia and Mantehonuria, over a strip of the island of Mongolia and Mantehonuria, over a strip of the western coast mast the bay of Possiet to the western coast mast the bay of Possiet to the seath of Vladivostock.

Eclipse of the Sun.

be sent.

Jesh specimen must be carefully wrapped sect.

Jesh specimen must be carefully wrapped and slip packed firmly in a wooden box and addressed, with inclosed label, to the '' Mining Gressed, with inclosed label, to the '' Mining Bureau, Pioneer building, San Francisco, Treight or express charges prepaid.

A letter should likewise be addressed to the Saste Mineralogist, giving detailed information as to exact locality and extent of deposit, present or exact locality and extent of deposit, present means of transportation to nearest market, buildings in which the atone may already bave one used and the name of the open used and the man of the open used and the man of the peen used and the name of the open nay already.

1½ inches.

Twenty thin ohips or flakes, approximately one and a half inches square.

In the preparation of the cubes it is imporbant the famt to mark which is the edge and which the bedding side, unless this is sufficiently obvious from the texture or grain of the rock.

All of the foregoing specimens should be carefully selected from a sufficient depth to income in the fresh material and as complete freedom as possible from weathered surfaces. In addition, one or two specimens particularly illustration, one or two specimens particularly illustrations or two specimens particularly illustrations of the particular p

Two ghly dressed.

Two cubes of two inches, edge roughly chipped.

Two cubes cut out conformably with the bedding of the rock of two and one-half inches edge if rock is soft, and of one and one-half inches edge if rock is hard.

Ten hand specimens roughly chipped to the size 4kx3kx1k inches.

Six hand specimens polished on one side and Six hand approximately dressed, otherwise of the size 4kx3kx1k inches.

If inches.

Should this paper be received by any subscriber who should this paper be received by any subscriber who colors not ware it, or begond its time to suckness to stop it. A postal for this tim not fall to write us divect to stop it. A postal inch know card (costing one cent only) will suffice. We will not know ing the sond the paper to supone who does not wish it but in the continuet, knowing the first incomplete, brought will be subscriber to anyone who continue it, or some irresponsible party reconditions to the superson of the superson o

Twenty thousand Knights of Labor threaten withdraw from, the organization on account distatisfaction with Powderly.

Тре Отрреим.

Onto the property of the prope

THE NEW CATALOGUE OF THE INGERSOLI.

Company has just jesned its new estalogue, being the seventh published by it. This large its eventh published by it. This contains a large number of bandsome cuts illness contains a large number of bandsome cuts illness that of the many powerful and ingenious trative of the many powerful and ingenious pany and the methode of operating the same, these power drills being shown in the various pany and the methode of operating the same, pany and the methode of operating the same, the second of the property of the contains and tunnels, sinking shalts, stoping out drills being shown in the various drills being shown in which they are placed in driving the sand tunnels, sinking shalts, stoping out drills and tunnels, sinking shalts, stoping out the and tunnels then well-written descriptions. What with the well-written descriptions the methodes of smploying them, then the same tinder gotten up and so much are they likely to concern those interested in labor-sconomizing mechanisms and inventions. In this the two of the concern those interested in labor-sconomizing of the 23 large tunnels that have of late bear driven in this country having employed their and the concern which having employed their in Mew York City, is represented on this ocast of the 23 large tunnels that having employed their in Mew York City, is represented on this coast of the 23 large tunnels that having employed their in the code of the concern which has large darkers the same of large their large. A California and 21. Fremont street, San 1saoy, 8 California and 21. Fremont street, San 1saoy, 8 California and 21. Fremont street, San 1strancisco.

It is estimated that the cost of new buildings the United States for the present year will Diggings and another Brandy City.

#### ELECTRIC DEVELOPMENT COMPANY.

Incandescent & Arc Electric Lights.

Electric Motors, Dynamus, Trancate, Elevators, Signals and all kinds of Electrical Systems for lighting and sandadon of power, either direct or with storage Hatteries,

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCVNDESCENT FIGHT

means of working the Whole 24 hours, invaluable to confuse for had others, for whom one state than night that in a state of the Way of the Way of the thin night that in the United State of the Way of the Way of the thin night that in a state of the Way of the Way

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

#### No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

DEMEZ

NILHO CLY YCERINE

Blasting Powders. ("DYNAMITE" or "GIANT")

Vigorit "LOW" Powder,

FOR REMOVING STUMPS AND TREES, Wensger.
WORKS: California City, Marin Co., Cal.
ED. G. LUKENS, Manager.



Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agency ingtons and the capital cities of the principal nations of the world. In connection with our editorial, soientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The other advantages far beyond those which can be offered home inventors the Gines, and the frequent information of Patents already granted, for the purpose of determining the patentality of inventions frought before us, enables us often to give advice which will save inventors the examination of Patents already granted, for the purpose of determining the patents the inventiors the inventiors will associate the content of applying for Patents upon inventions which are not new. Circulars of advice sent free on receipt of postage. Address DEWEY & CO., Patent Agents, 352 Market 81, S. F.

## THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

GIVAL FOWDER OF DYNAMITE,

Of Different Strengths as Required.

GELATIUE-DYNAMITE, Stronger than Dynamite and even Safet in Handings, and UNDEL'S EXPLOSIVE GELATIUE, which contents 84 per cent of Witte-Glycerine, and

611 and 613 Front St., San Francisco. TUBBS & CO.

Manufacturing Purposes.

Established 1856;

San Francisco Cordage Factory.

NEM LORK" No. 25 Bond St.,

H. M. RAYNOR,

Nos. 129 & 121 Fremont Street,

JUDSON POWDER IMPROVED.

FOR EALLROADS AND LARY CEFARRING. 1s from three to due streets these stronger than earliers better made in ing Powder, and is used by all the Eathers and the set treety. It is as day as treety.

BANDMANN, NIELSEN & CO., BE TO THE SERVISION CAL. APS and FUSE for Sale.

PERFECT PULLEYS

First Premium Awarded at Mechanics' Fair, 1884.

Medart Patent Wronght Rim Pulley

For the States of California, Uracon and Avada, and the Territories of Idaho, Washington

Beet Eslanced Ful. by in the World. Also Manufacturers of

Best Eslanced Ful. by in the World. Also Manufacturers of

Farr. corr. 26, 1881.

Share Fring. HANGERS AND APPURTENANCES

Farr. corr. 26, 1881.

Sale Street.

Sale Fring. Street.

Sale Fring. Street.

THE JUSTLY FAMOUS

Anderson Springs

#### Excellent Board with Good Home Cooking.

Engraving superior Wood and Metal Engrav-fug, Electrotyping and Storeotyping and Storeotyp Constantly on hand a full assortment of Manila Rope, as Lope, Taxed Manila Kope, Hay Koye, Toxed Wentle made to order on short notice Extra sizes and lengths made to order on short notice

> construction the mat is prevented from stretch-ing in the direction of the length of the stretching, which is the direction in which the stretching would produce had results upon the hag. By reason of the spaces between the strips the mat reason of the spaces between the strips the mat Reported by Dewey & Co., Ploneer Patent Ballokors for Pacific States. List of U. S. Patents for Paoific Coast

#### To Inventors,

Co., Printers, 415 Market street, below First, San Francisco, Cal. style and at low rates. CUBERY & do every class of printing in good pared to make wood cuts, and to below First street. They are precation office, at 415 Market street, su otuce nearly opposite our publietc. Cubery & Co., Printers, have public by printing circulars, cards, bring them to the attention of the from Jour inventions you must In order to derive any benefit

#### ASSESSMENT NOTIOH,

Morris Beer Preserver Company.—Loca-

## AMERICAN SYSTEM

.घुतार्रतप्रदान जार्यक्रामु

Ages, 1970, THE ONLY PERFECT SELF-REGULATING SYS-

ELECTRIC IMPROVEMENT CO.,

I nas ..., ... ta amosnas 712 sols aparts for

California; Mevada, Oregon, Arizona and Washington Territories

M. S. KEITH

Keith's Electric Dynamos,

MOTORS, LAMPS

Electric Ballways, and Apparatus for the Electric Transmission of Power,

Calce, 40 Neveda Block, Factory, II Stevenson St. San Francisco, Cal



The H. H. Horse Liminate pure the first find that the first first

For Sale by all drugglets

#### School for Girls and Young Ladies **LIEFD SEMINARY!**

1826 Telegraph Ave., Obkland, Othl. Address MgS. R. G. KWOX, Proprietor, or Miss frances a. DEAu, Principal. ATTRE 16th year will begin Wednesday, Aug. S. 1887.

367,086.—CABLE PROPUZION POR RAILWAYS—

R. F. Berlewell, 3.

367,191.—WHEEL FENDER FOR WAGONS—

367,191.—WHEEL FENDER FOR WAGONS—

367,191.—OIL CAN—J. M. Coulier, Portland,

367,273.—OIL CAN—J. M. Coulier, Portland, FOR THE WEEK ENDING JULY 26, 1887. SOLITY — Co. - Andres, S. F. Solity — Cor. Solity — Cor. Solity — Cor.

67.134—TREE COVER AND FUMICATOR—John Culver, Los Angeles, Cal. Gorege W. Douge (S.F. )

From the official report of U. S. Patents in Duwrit & C., S Patents Office Library, E. O. Marked St., S. F.,

Inventors.

367,343 — FLOOR, ROOF OR AREA COVERING— 367,353 — DUME-WAITER STOP—J. J. Mahony, S. F. ISS. — DUME-WAITER STOP—J. J. Mahony,

Mora.—Coples of U. S. and Foreign patents through by Dowey & Co., in the shortest fame possible through of the cortex fame near fame patents. Or talegraphic orders. Amentana and Foreign patent of the cortex fame force fame for Forlio Cost inventors transacted with perfect security, as reasonable mayons transacted with perfect security, as reasonable mayons and in the shortest possible time.

#### Notices of Recent Patents.

Dewey & Co.'s Sourarivio Press U. S. and Foreign Patent Agency, the following are worthy of special mention: Among the patents recently obtained through

WORTHY Of special mention:

CABLE KALLWAY.—G. W. Douglas, S. F.,
Cal. No. 367,137. Dated July 26, 1887. The
novelty in this invention lies in the construction of the transverse frames forming the loops
and yokes which support the stot frome and
also the rails, and unite the two together. The
che rails, and unite the two together. The
also the rails, and the means for securing
the rails to the frameworks to that they will not
sist of a union of T and angle iron, bent to the
sist of a union of T and angle iron, bent to the
sist of a union of T and angle iron, bent to the
sist of a union of T and angle iron, as the frame is
stronger than that made of bent to the
attention only one-balf as heavy.

TREE COVER AND FURIDATOR.—J. P. Chlver,

TREE COVER AND FUMICATOR .-- J. P. Culver,

Los Angeles, Cal. No. 304,134. Dated July 26, 1887. The purpose of this invention is to clear trees from scale and other noxious insects of the more of more peculiarly constructed it consists of one or more peculiarly constructed trees to be covers being also connected in series, so that one or more of the trees may be easily applied to constructed that they may be easily applied to the trees and readily transported from tree to the trees and readily transported from tree to inclosed by them is filled with a suitable noximolesed by them is filled with a suitable noximolesed.

No. 367, 152. Dated July 26, 1887. The DUMB-WAITER STOP. J. J. Mahony, S. F.,

cal. No. 367,152. Dated July 26, 1887. The object of this invention is to provide a simple and defective mechanism for catching a dumb and defective mechanism for catching a dumb variete at any desired point and hanging it up positively. The present stop is an improvement though, though it involves the same principle of operation. Briefly asted, it consists of a gravity osteon the waiter, which is arranged well. The disengagement is effected by a gravity trigger on the catch, which throwes the notched strip. The stop is very simple and at the same time effective.

The same time effective.

The same time effective.

The sons time effective.

The sons time effective.

The sons that the stop is very simple and the state of the sons that the sons that the sons that the sons that the sons the sons that the sons the sons that the sons the sons the sons that the sons the sons that the sons that the sons that the sons the sons that the sons the sons that the sons the sons the sons the sons the sons that the sons the

This paper is printed with Ink Manufactured by Charles Eneu Johnson & Co., 500. 500 turned balles Branch St. Philadelphia. Branch Salle Sall Way York, and 40 La Salle St., Ohicago. Agent for the Pacifac Cosat-Joseph H. Dorety, 539 Commercial St., B.,

## Iron and Machine Works.

CALIFORNIA MACHINE WORKS, Steam Engines of the Machinests, and Machinests, and

Brodle Rock Crushers,
Steam Power, Hydraulic,
Side Walk and Hand-Power Steam Engines, Flour Mill,
Mining, Saw Mill and
Dredging Machines
Brodle Rock Crushers.

Manulacturers of B. E. Hoarickson's fateun Automatic fety Catches for Elevators. All kinds of machinery acts and repaired. ATORES Solicity.

#### SAURAMENTO, OAL. UNION IRON WORKS,

ROOT, NEILSON & GO.,

Steam Engines, Boilers,

Front St., bet. M & O Ste., Sacramento, Cal. Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired, Front St., bet. N & O Sts., Sacramento, Oal. MACHINERY FOR MINING PURPOSES.

#### Golden State & Miners Iron Works.

Marufacture Iron Castings and Machinery of all Einds at Greatly Reduced Rates.

SLEAEUSON'S PATENT

Mold-Board AMALGAMATORS,

Golden State Pressure Blowers.

First St., between Howard & Folsom, Sts.

THOMPSON BROTHERS,

ENKEKA FOUNDRY

29 and 131 Beale St., between Mission and Howard, S.F

ANUTACTURARS OF CASTINGS OF NYARY DESCRIPTION.

WATCHERS OF GENERAL MACHINERY.
WORKE, No. 315 Mission Re., San Francisco.
Special attention given to Woodworking Machinery,
Steam and Gas Engines. Correspondence solicited.

#### MINING ENGINEERS.

MINING EXPERT AND GEOLOGIST, Oivil and Mining Engineer, W. A. GOODYEAR,

ROSS E BROWNE,

NO. 307 SAXSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

American Exchange Hotel

Sansome St., Se One door from & \$1.50 | Coach. Ban F Fra.

The above Hotel is situated in the midst of the Bank-ing and Commercial Houses of the city, and is by lat the mose home-like and desirable Hotel to stop at. OHAS. & WM. MONTGOMERY, Propre-

Practical Treatise on Hydraulic Mining.

This new and important book is on the use and con Tris new and important book is on the use and con rection of Ditchee, Finance, Dame; Pipes, Flow of Water at Heavy Grades, methods of mining shallow and deep access, intelovy and development of mines, records of id weather, mochanical appliances, and as nozzles, effords of heating; fundes and almose; athlings and map; duty of miners intol, etc. A very practical work or sole but and users of water. Proc. \$5, post-paid, or sale by DEWEY & CO., Publishers, 252 Market San anciesco.

TOPMANDER POST SE. S. F. Send for Chronier.

Send for Chronier.

Send for Chronier.

Send for Chronier.

## NEWHAL

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents. Growers and Manufacturers of States, Europe, Australia, India, Obins and the principal states for the United States, Europe, Australia, India, Obins and the principal states of the Contraction of the Contraction of the States of the Contraction of the

Сно. W. Dicere, Manager. J. C'B. Gunn, Secretary. GRO. W. PRESCOTT, President. IRVING M. SCOTT, Gen'l Manager. H. T. SCOTT, VICE-PTEB and Treas. General Agenta for the Pacific Coast of WATIOWAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Massa

Office, 216 Market St., S. F. Location of Works, Potrero. P. O. Box 2128.

STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed. Agents of the Cameron Steam Pump.

Rock Breakes, Polk-Peddes, Polkers, Settlers, Retorts, Etc., Etc. VERTICAL ENGINES,
HORIZONTAL ENGINES,
AUTOMATIC COT-OFF ENGINES,
SUAPEUM SNV. BARY HOISTS, VEUTILALING FAUS, BAMATS

TRY OUR MAKE, CHEAPEST AND BEST IN USE.

**NNION IBON MOBKS'** 

ors to PRESCOTT, SCOTT & CO.

#### MOBKS IBON

HINCKLEY, SPIERS & HAYES, Proprietors.

'330 Fremont 5t" San Francisco

Works, Cages, Ore Buckets, Ore Cars, Pumplug Engines and Pumps, Water Buckets, Pump Columns, Air Gempressors, Air Récosprers, Air Pipes, MINING MACHINERY.—Hoisting Engines and MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or Compound, Stern or Side-whoel Engines.

MILL MACHINERY.—Batteries for Dry or Wet

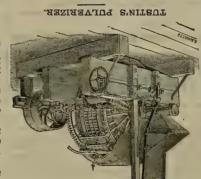
Crusbing, Amalgamating Pane, Settlers, Furnaces, Re-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc.

Mill Machinery, Saw Mill Engines and Boilers, Dre Machinery, Powder Mill Machinery, Water Wheels, MISCELLANEOUS MACHINERY.-Flour

Tustin's Pulverizer

DEAUE STEAM PUMP.

WORKS ORE WET OR DRY.





OF ALL KINDS,

Water Pipe, Pamp or Air Columns, Fish Tanks for Salmon Canneries

OF EVER PRECEITION. Soiler Repairs Promptly attended to and at very moderate

Deane Steam Tump. F. ...

Corlise Engines and Tustin Ore Pulverizers.

MILL PACIFIC ROLLING

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Gest or Wrought .

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Bods, from \$\) to 3 inch diameter and Flats from 1 to 8 inch. Angles, Tees, Channels and other shapes Steel Wagon, Burgy, and Truck Thes, Ploy Steel, Machinery and Special Shape Steel Shapes Steel of iso and lengths. Became, Argic, Arden and Merchart Iron, Figles and Machinery and Steel Iron Steels Ships and Steel Boost Steamboat Shafts, Cranke, Prisons, Connecting Rods, etc. Gar and Locomotive Ardes and Frames, shapened Shafts, Cranker, Prisons, Connecting Rods, etc. Gar and Locomotive Ardes and Frames, and Iron Frances, Prisons, Connecting Rods, etc. Gar and Locomotive Ardes and Frames, and Iron Frances, Steamboat Shafts, Cranker Princes, Steamboat Shafts, Cranker Princes, Steamboat Shafts, Cranker Shafts, Crank

TAL OLGELE MIII DENG

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

And General Mining Machinery For CATALOGUES, ESTIMATES, Etc., Address **BOCK DRILLS,** 

AIR COMPRESSORS,

CLAYTON

Catalogue No.5, Jan I, 1887 AND MALLED FREE ON APPLICATION, INZL IZZNEDI

HEURY CAREY BAIRD & CO., Industrial Publishers, Booksellers, and Importers, 810 Walnut St., Philadelphia, Pa., U. S. A.

THE TECHNO-CHEMICAL ESCRIPT BOOK.—Containing Several Journal of the Control of Cont

NOW READY, LPG LECPDO-CPGMICSI KECGIDE ROOK

METER' KORRETT & CO"

For Mining Purposes.

SOLUTION and WATER TANKS

PRECIPITATING VATS,

**LEACHING VATS WITH FALSE BOTTOMS.** 

Mining Vats and Tanks.

8 California St., and 21 Fremont St., san francisco, oal.

PARKE & LACY

INCERSOLL ROCK DRILL CO.

For Catalogues, Estimates, Etc. address:

THIRD EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIONS

Engineers' Tables of Progress

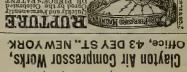
TUNNELING, SHAFT-SINKING, ETC.

and others interested in ENGINEERS, CONTRACTORS,

WINING WEN'

NOTICE TO

Mechanics Mills





PORTLAND, OREGON.

SAN FRANCISCO, CAL,

BALT LAKE CITY, UTAE,



ENGINES and BOILERS. Machinery, Steam Pumps, Wood and Iron Machinery NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

## HAZELTON BOILER.

A NEW AND RADICAL DEPARTURE IN

STEAM GENERATOR.

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

SEND FOR CIRCULARS.

gusttz

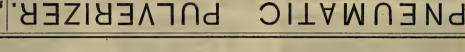
SAN FRANCISCO, CAL.

San Francisco, Cal. PACIFIC IRON WORKS,



RANKIN, BRAYTON & CO.

MINING MYCHINEELA



SEND FOR CIRCULAR.

Mining Machinery of Every Description, CONCENTRATORS AND ORE CRUSHERS,

F. A. HUNTINGTON,

Roller

Centrifugal

No. 45 FREMONT STREET,

POWERFUL OPPOSING CURRENTS

10 TO 200 TONS PER DAY,

PNEUMATIC PULVERIZER COMPANY,



Crush 8 to 10 Tons per Day.

2 and 4 Stone Street, NEW YORK,

WINCHESTER HOUSE,

Laundry Free for the use of Families 44 Third Street, San Francisco, Cal.
This Five-proof Brick Building is centrally located, in
the Grand and Paince Rockes, and to be con-

HOT AND COLD BATHS FREE.

Terms, Board and Room, \$1.00 per Day

And upward, ROOMS WITH OR WITHOUT BOARD,

COV21' COAL MINES OF THE WESTERN Zinc, Copper or Brass Screens for all purposes. Call-iornia Perforating Screen Co., 145 & 147 Beale St., S. F.

SAW MILLS AND MACHINERY OF all kinds made to order. Send for Descriptive Cata-

SAW COMPANY

N. W. SPAULDING

Saws.

CIRCULAR CHISEL BIT Inserted Tooth

SPAULDING'S

TOTESTIC STATESTICE.

WEIGHT, 4 TONS.

It is a full fledged Quartz Mill without gearings, cogs or pulleys.

More or less weight on Chrahers as desired, more or less weight on Chrahers as desired, and the commend it bight, splendid for low-grade one account or recommend it bight, splendid for low-grade one account or low cost of working.

WM. GUTENBERGER,

SACKAMENTO, CAL.

SACKAMENTO, CAL.

Any intragement or this mill will be presecuted to the full extent of the land or contract.

(#275.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE NOW IN USE. Concentrations are clear from the frest working. The were read to make tests at 220 Fremont Street, San Francisco.

ADAMS & CARTER, Agents Frue Vanning Machine Co., Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; February 20, 1865; September 18, 1853. Patents applied for. N. B.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 as I fruce and more stamps have been purchased. DEER SIRE!—Having bested three of your Fure Venness in a competitive trial with other similar unschin (Triumph), we have satisfied ourselves of the superiority of your Venness in a conjective trial with the fact of our farly, we have satisfied ourselves of the superiority of your venus truly, more of your machines for immediate delivery. Yours truly, MOMPAIN Climited), N. H.—Since the conjective was written the 30 Vanners because farted once such exclassions that the A. M. H.—Since the conjective was written the 30 Vanners because farted once such exclusions that the A. M. H.—Since the conjective was written the 30 Vanners because farted once such exclusions.

OR VANNING MACHINE. ORE CONCENTRATOR THE FRUE

L. R. MEAD, Secretary.

SAN FRANCISCO, CAL

R. S. MOORE, Superintendent,

Room 7, No. 109 California Street,

WM. H. TAYLOR, President.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

DURABILITY, SAFETY,

AF Builders of 120-stamp Gold Mill for the Alsaka Mill and Mining Company; 60-stamp Mill for Quarta Mountain Mining Company.

STEAMSHIPS—Steam Yachts, Marine Engines and Boilers, Screw Propellers, Centrifugal Fum Pumps, Steam Capstans, Cargo Winches, etc.

AND FACILITY OF INSPECTION and REPAIRS. ECONOMA

Guaranteed More Efficient than any other Boiler made. Bollers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Oo., California Jute Mills, and other places. .esu ni won rewot estoH 000,06

EEFRICERATING MACHINERY for Steamships, Broworles, and Collers, STEAM BOILERS of all descriptions.

STEAM BOILERS of all descriptions.

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces of all kinds.

AIR COMPRESSORS—Goop Fower Transmission.

AIR COMPRESSORS—Goop Fower Transmission.

WROUGHT IRON WATER PIPE a Specialty. More—Have Just completed order for 35 miles of 44-linch part of Spring Valley Machinety.

WROUGHT IRON WATER PIPE a Specialty. More—Have Just completed order for 35 miles of 44-linch part of Spring Valley Machinety. More—Have Just completed order for 35 miles of 44-linch structure of all kinds.

STEAM ENGINES—Corlies, Side-Palve, Poppet Valve Automatic, Single, and Compound.

STEAM ENGINES—Corlies, Side-Palve, Poppet Valve Automatic, Single, and Compound.

SOLE MANUFACTURE SIGNATION.

SOLE M

**MATER TUBE** 

Manufacturers and Sole Agents for the Pacific Coast for

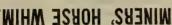
BOILER.

and WATER POWER MACHINERY

FIRTH, 18 and 20 Fremont St., San Francisco.



NATIONAL ROCK DRILL.



All wrought from. No gears, no breakage.

All wrought from No gears, no breakage.

One horse will easily interes statistics for the prospector.

Price, complete, \$200. 150 sold on this Coast.

Drill.

MADE OF BEST SOFT LAKE SUPERIOR COPPER



KNIGHT'S WATER WHEEL,

-ror-

NATIONAL AIR COMPRESSORS. MILLS, PUMPING AND HOISTING.

SINGLE OR DUPLEX, STEAM OR BELT POWER.

NOTIOE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are tested become leaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry.

521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material.

BATTERY SCREENS AND WIRE CLOTH

HADEO-CARBON ASSAY FURNACES Agent for HOSKINS'

FRANCISCO FURNISHED ON APPLICATION, GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

No. 108 FIRST STREET. NOVELTY AND PLATING WORKS.

THE RUSSELL PROCESS COMP'Y.

C. A. STETEFELDT, President.

NEW YORK OFFICE, 18 BROADWAY

IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS. CHILLED CAR MHEELS

MEDAL AWARDED, MECHANICS' FAIR.

STEIGER & KERR, JAS. W. EKER CHAS, R. STEIGER.

If you want a good pair of Gloves, sak your merchant for our brand,

IN QUARTZ, GRAVEL, OR PLACER MINES.

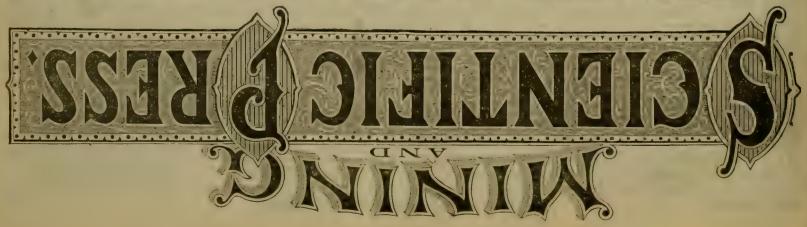
FOR SAVING

LEAK GLOVE MANUFACTURING CO.,

SAN FRANCISCO.

ROOM TOOM

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.



Illustrated Journal of Mining, Popular Science swan letanad bas

BA DEMEA & CO.

SAN FRANCISCO, SATURDAY, AUGUST 13, 1887.

and the latter is slowly revolved, while, by means of the furnace, the pipes E, and the steam therein, the cylinder and contents are

Митрет 7. Митрет ТV.

the cylinder to expel the sir, sitter which, by means of the valves  $\mathbb E$  and  $\mathbb H$ , the ingress and egress of the steam is controlled so as to give the required pressure of steam in the cylinder. At first steam is allowed to pass through

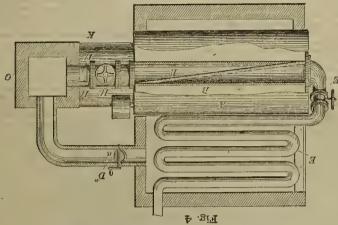
passage and made to fill the chamber and space of the control of the first part of t

Mathews of Carton, Ohio. This improved compartments, each extending the length of the camplantizing gold and silver ores consists, escentially, in heating in closed vesting in closed as supproved the consists, escentially, in heating in closed vesting in closed vesting in closed as supproved the consists, escentially, in heating in closed vesting in cl phurizing ores, most of which have been tried theore. Through the steampipe, B, that is divided at one time or another on this coast. A recently longitudinally the steampipe, B, that is divided precented system is that invented by Joseph H, inside by the disgonal partition, B', into two There are many different processes for desails and has inside longitudinal ribs, a', for elevating Desniphurizing Gold and Silver Ores, mounted on rollers, a, and provided with any more or less obstructed by the piers & so that are many different processes for desni- and has inside longitudinal ribs, a, for elevating the products of combustion are retarded in their means of the furnace, the pipes E, and the latter is slowly revolved, while, by There are many different processes for desni- and has inside longitudinal ribs, a, for elevating the products of combustion are retarded in their means of the furnace, the pipes E, and the latter is slowly revolved, while, by There are many different processes for desni-

EUD ELEVATION OF DESULPHURIZING APPARATUS.

S BiH

TRANSVERSE VERTICAL SECTION.



SIDE ELEVATION OF DESULPHURIZING OYLINDER.

S शुःस

PLAN OF FURNACE, FLUE AND HEATING CHAMBER.

500° to 550°. The inventor states that it is profess to keep profession in carrying out the process to keep mori ,bissorots as ,si tasd to sange elerable trom 650° the results are so different that it can hardly be considered the same process. A not commence, and above 650° combinations are formed with the gold and silver that are very difficult to amalgamate. In itse, shows dition for the said oxidation when the ores are bested from 400° to 650° F., but with a preferable mean temperature of from 500° to 550°. Below 400°, practically, oxidation dose with the baser metals, the gangues of which are found to be in the most favorable contained in the superheated steam, with which it readily combines, forming sulphureted hydrogen, and the oxide unites and forms oxides treated by this process usually contain considers erable sulphur, that, especially when heated, has a strong affinity for the hydrogen con-Meantime, as the ore becomes heated to about 400° E., the oxidation of the baser metals commences. The ores that are best adapted to be



edt stneverq bna V ralloo edt tanisga tdgit sure of steam from the inside keeps the ring ; a thin metal diaphragm, I, to which is secured a friction ring, i, that loosely encircles that this fifth This fifth a fact of the tube B, making a tight joint. The preserve the tube the test was the time is th some distance from the tube, and has attached

ore, as shown in Fig. 2.

The pipe B at the rear is provided with the nission of steam to the cylinder. fue  $D_s$  and is joined to the tube  $B_s$  which is provided with the valve  $E_s$  to control the adwith a suitable steam generator, and is located in the upper portion of the fire-box Cand in the the damper d. A coil of pipe, E, is connected furnace to the chimney G, and is provided with

A represents a closed cylinder provided with to the chimney, and has a sliding door, h, muttable doors for secess to the inside the escaping gases may be invalve H, connecting it with the tube eading

Illustrated in the accompanying drawings.
Fig. I is an end elevation of the apparatus. The apparatus for carrying out this process is the gold and silver are left in a free metallic state and in proper condition for amalgamation. ore, except gold and silver, are oxidized and of pressure, to the end that all the metals in the sotion of superheated steam under pressure, but preferally limited within a definite range grees of heat, and treating the heated ore to the is provided with a number of short nozzles, b,

0,0000

section of the packing rings, disphragm and a portion of the attached cylinder-head. section of the central tube and a transverse broken away and a horizontal section of the central tube below. Fig. 5 is a longitudinal setting in vertical section. Fig. 4 is a plan view of the furnace, flue and heating chamber, showing a plan of the cylinder with portions the central tube inside with the walls of the Fig. 2 is a transverse vertical section of the same. Fig. 3 is a side elevation of the cylin-der, a portion of which is broken away to show

(Continued on page 101.)

heating chamber F that partially surrounds the cylinder. A flue, D, leads from the rear of the manner with grates, doors, etc., and connects above with the flue D that leads laterally into the O represents a fire-box, provided in the usual the cylinder. The eduction side of the tube is provided with nozzles, 5', resching near the bottom of the cylinder and opening from the

that direct the steam entering the cylinder laterally toward the upper portion of the ore,  $\mathbf{L}_i$ , that is piled to the one side by the rotation of

In carrying out the process a suitable quansecape of steam from the cylinder.

**CORRESPONDENCE**,

We admit, unindorsed, opinions of correspondents.—Eng

Jottings in Amador County.

EDITORS PRESS:—Ione is a pretty little place, with three hotels, several churches, a flour-mill, and the usual complement of blacksmith-shops, stores, etc. In the vicinity are two coal mines, the product of which fluds a ready market.

Jackson, 12 miles away by stage, has had its nare and downs, but is now getting on its feet, and downs, but is now getting on its feet.

Jackson, I2 miles away by stage, has had its ups and downs, but is now getting on its feet, with their 40 stamps apiece pounding and crushing the ore, make sweet music in their decreases are said orbit have large ore bodies in slight, enough to last for years.

Sutter Oreek, four miles away, was at one slime a busy camp, and, if we are to believe the inhabitants, has as good mines as ever, only needing capital to develop them. Work has peen started on the Wildman mine, pumping nout and otherwise getting the property in shape, on an other man, is sometime that the Mahony, it had been idle for some time. The Mahony, it had been idle for some time. The Mahony, teek is a charming place, needing in the valley, with pretty residences and nicely kept valley, with pretty residences and nicely kept grounds.

valley, with pretty residences and nicely kept yelley, with pretty residences and nicely velve yerounds.

Two miles further brings us to Amador City, As we approach the place our ears are greeted with the roar from the mills. The furst mine with the roars from the mills, and stamps, and on the other side of the town, the Beam Pally & Stamps, and of the town, the Beam bas been running since 1851, and is good for years to come. Adjointly the Keystone, the Edipse, an incorporty. The Little Amador is just starting there is every indication of its being a rich property. The Little Amador is just starting and at prospect work, the Boyan patent roller, property. The Little Amador is just starting was prospect work, the Boyan patent roller. Deventing used to grind the ore alter starting give employment to a suitable size, All these mines give employment to a suitable size, all these mines give employment to a suitable size, all these mines give employment to a suitable size, all these mines been crushed to a suitable size, all these mines give employment to a suitable size, all these mines about two miles distant. On the edge of the town M. C. Randolph has been at work since town M. C. Randolph has been at work since town M. C. Randolph has been at work since more anon.

In the since of the promising little mine, four more anon.

In the since of the promising little mine, four more anon.

J. L.

more anon. Plymouth, July 29, 1887.

The Road-Runner.

runner. I thought that bird was a friend to economic agriculture, and as such I praised him. I take it all back. The road-runner is a planete, and a robbert but he is a stalenced agricultur and a robbert prompt of the content of th knowledge of ornithology and all the other ologies, I formed a high opinion of the fast trot-ting bird known to Pacific Coasters as the road-EDITORS PRESS:-By reason of my limited

of our great republic. Alining is the great over the past ages, for hietory plainly tells us that barbarous races became civilized when they worked upon metal. The Greeks, Hretons, worked upon metal. The Greeks, Hretons, worked upon metal. The Greeks and small animals, eaves, subsisting on roots and small animals, eavely subsisting on roots and small animals, earth's strats that their minds become enlight, end, it is great that their minds become enlight, end, it is great and the savage hauts of the mort of the savage hauts of the mort of the savage hauts of the mort of the savage hauts of the mortal species. That mining (or money) is the more of salted and precisely between the he has each biseory of the world's progress. The tablished can be be ablessed on the savage harren of the mortal species of the mortal savage to said the savage harren monutains. We are certain of one thing: that war and peace. He has given us tools that we may he our way to distinction and fame, may he our way to distinction and fame, had seen to savage and implements of the mortal species. The describing the savage for an area of some from it trenches by shots and groot sets had since and groot sat the standards of such and some hardships and groot sets of more hardships and groot sets of more bardships and groot sets of more bardships and groot sets of more to savage for an area of some of the miner's life. There has been not over the manger in Judea's the produced at the cloud over them in the brooke. The dark hearited pack where they many in its silten to worth the manger in Judea's hight. They was no carried packs of manger and progress and tools upon their backs. There was no sard tools upon their backs. The standard or savage fore. The standard shall groot or are walking of savage fores. The oldest prospectors our secondared with alivered has prospectors on the savage fore in the production of the men beautiful to have a sail with them. They was no conquered the mew beauties of they was no conquered the mew beauties of they was What They Have Accomplished.

Very little is said about mining outside of the grand discoveries daily made within the borders of our great republic. Mining is the great civilizer of the past ages, for history plainly tells us this are the same saces here inliked when they

Give the Miners Credit.

Pajaro Tounship, Santa Oruz Co.

I take it all back. The road-runner is a pirate, and as such I praised him, entitler. Let as nearly and a robber; but he is a talented and a most, and a most is but of seided or the is a talented critter. Let as enow tell you what I saw a road-runner do on the 3d day of June, 1887. Among way other small possessions I have a very interesting the me now tell you filled to a fact, at a cross-road called Sandtord's (or Sandy's) or the sering farm, where a let is a gratly level ploud, hand, and this farm is partly level ploud, hand, hand a serie covered with partly but marsh, partly will a partly well and the serie in a far to a variety of but in a gard, and the serie in a far the form of a well and the serie in a far the ploud of a serie in a far the covered with the calle, in a quiet cove of the hill; beyond the fact in a far the control of a more in a far the fall the captiles. A mong his far cowed the hills, fory excuring and communing with the series and repaired to be the chills, and common partly fall comes fory excuring and common partly fall comes fory excuring and common partly far comesticated to be the capt and the relations in the fall comes of the fall comes of the fall of the series and entered the comesticated and the ordinary and the ordinary while being the place, but on the series and entered the fall of the series and entered the common the fall of the series and the series and the series of the series of the series and entered the fall of the series of the series of the common in the fall of the series of the series of the series and the series and the series of the fall of the common the series of the

THE OIL-TERDS.—Statistics show that 53,000 wells have been drilled in Penrsylvanis and New York since the discovery of petrobeam Alew York since the discovery of petrobeam at a cost of \$200,000,000 and respectively of the produces of the produces of the produces of \$300,000,000.

Were sold at broth to the produces of \$300,000,000. The amount of oil exportes of \$300,at 6,231,102,925 gallons. In the produces of \$300,at 6,231,102,925 gallons. In the pool in Washpended in machine and admitted the sen expended in machine and the conpended in machine and the conpended in machine and the sen expended in machines, there is about
the first of the oil business, there is about
\$50,000,000 invested in natural gas plants in
the construction of the oil and gas
serve to show the magnitude of the oil and gas
business,—Osi Criy Dervick.

Business,—Osi Criy Dervick.

In the State of Kansas the average earnings of unskilled labor last year were \$300.

mountaine, and its work to the servers a mountaine, and its work of the servers o

wore fines the second of the s

the unexpected has happened, and silver is in-disputably scarce. The city editor of the Tymes has been under the painful necessity of strain on them to recognize anything incon-sistent with their pet theory. Nevertheless The idea of silver being scarce will be scouted by many supremely wise people as being absurd and impossible. These supremely wise speople have for years been so busy discrediting silver, and talking about it as a drug in the market, that it must be altogether too great a stain on them to recognize anything inconstituting the constitution of the constraint of the constitution of the

Searcity of Silver,

have an actual scarcity of silver while everybody was thinking of a plethora. Maturally
the anomaly begins to except attention in various quarters. In the stock market it is giving strength to silver securities, particularly to
rupee paper, which, after falling within the
past three morths to 71, is again back to 72,
If the silver scarcity develops, as it seems
Ilkely to do, rupee paper will be worth buying
likely to do, rupee paper will be worth buying
for a long rise.—London Financial News.

and which, in the very near future, we have no doubt, will become famous as one of the great-doubt, will become famous as one of the great est mining properties in the Northwest. The Porest City, as do the various district, which run, defined quartz vains of the district, which run, on the northeast and southwest, are on take essering some 2000 inches of water, a stream containing some 2000 inches of water, as stream only water can be that springs from the extrem the properties of the properties of the search of th

and which, in the very near future, we have no apecial attention was the original discovery vein, of which the Forest City property is part, The first lode of importance which attracted Forest City discoveries, near the headwaters of Rock creek, and inspected the various quartz mines there located.

-byA (nogenO) viiO readed edt, do retroger A wen edt of dieiv a bieg yldneser invoomed door

The Rock Creek Mines.

MINIMG DECISION.—The Supreme Court has reversed the decision of Judge Williams of Placer, who presided in Butte in the case of Twa. Singer and Wm. Gregory vs. Perabbaker. The principles laid down by the court are sa follows: First—As between two persons, allows: First—As between two persons, altempted dosation, and both of whom the claim between the profit of the case of the base of the case of the base of the case of the base of the case of the

#### Maldoon District, Idaho.

had made his title scentra. Contest was made by one Van Nostrum, a professional contestart, by one Van Nostrum, a professional contestant who proposed gaining some preference right and seiling them out. The local officers and against commissioners decided for Young and against a modification of this decision. He says while a modification of this decision, He says while a matter, the Government is not stopped from services upon information it has gained, and he dition upon information it has gained, and he ditects cancellation of Young's claim.

ments on patented articles. It is a wonder that and innocent users of fraudulently sold infringework sometimes exceeding hardship to honest It is certainly true that our patent laws

Change the Patent Laws.

The last issue of the Mining Industry con-tains the following:

The last issue of the Mining Industry contains the following:

The political economists tell us in their books that state that a nation's material prosperity is measured by the volume of money that circumstants that a nation's material prosperity is lates among its people. The newspapers take and the face, and write about inflation and contraction and state in the face, and write about inflation and contraction and their contains the face, and write about inflation and contraction and power, appendix in its temples to the face of the face o

Mining Benefits Mankind.

Homestera Deneires.—A general principle of long standing and considerable importance in the administration of public-land matters is readment by Acting-Secretary Muldrow, in his readment by Acting-Secretary Muldrow, in his standard on the case of the James Young homewast and no showing of good faith in other respects, and the mount of cultivating improvement, that no amount of scheal residence present action to make and secure in second the secure of scheal residence of scheal residence becament of title. Young had outlively to a claim except in so far as it shows an intensition to make such the secure of the scheal residence becaments beyond the acquirement of title. Young had outlively thous to make how and in the secure of the schements beyond the sequirement of title. Young had outlively by the continents of the sequence the continual stringsting lived. His improvements were valued at from \$1000 to \$1200. His family remained on a \$1000 to \$1200. At the secure of season as the bis claim as a place of residence of seagned to abase in evidence that he designed to abandon bis claim as a place of residence as soon as the bis claim as a place of residence as soon as the claim as a place of residence as soon as the place of the season as the claim as a place of residence and the residence and the season as the claim as a place of residence as soon as the place of the season as the claim as a place of the season as the claim as a place of the season as the season as the claim as a place of the season as the

discovery of the method for the axtraction of the method for the matals from ore that characters and tents to a resident the axe and tents to a resident from a dweller in caves and tents to a resident from a dweller in caves and tents to a resident arrow-heads with the axe and-rifle; that made cleared forests, iron ships, the steam engine, the telegraph, the electric light and the print, and lead and gold and silver in the ore that the miner digs which makes mankind better than eavages, Human comfort and infelligence began with mining, and are largely sustained by it.

The thing that injured commerce in the dark and with the before, for mankind is the orestructioned by it.

The thing that injured commerce in the dark and we only as its and commerce in the dark only as its toought it before, for mankind is the orestruction only as its tools for labor are angulied, and so only as its tools for labor are applied, and so only as its tools for labor are supplied, and so long as the world uses gold and silver for long as the world uses gold and silver for long the cooler, last so long must the miner furnish those tools. His work is one that should be encouraged and protected by the Government.

the California of a constitution of a constituti

bartem was ac-tacked in its tacked in its strongholds by the quickened in-kind. Then came the unparalleled additions from the California

ments on patented articles. It is a wonder that the evils have not set now peems or urgently compliance of, not only by learners but by many other of plained of, not only by learners but by many other industrial users in the United States, that our congressmens should have beard their demands and given their should by a change of enaction of the subject. While many serious bauses have no don't confirm the patent office for years, the main difficulty and overshadowing evils horne by our people come trom the leaft of the patent system. Faulty as it is, the United States system will compute favorably with the spatent system will compute its states as the constant of the states are in the constant of the states of the states

source should be lost by Congress in so hor dime should be lost that innocent users changing our patent should be protected from of patented devices should be protected from

The Black Spar.

This claim is classed as a good one, and the pride of Muldoon district. Sam Wilson (not San Wilson (not San Wilson (not men who have clung to their mine through thick and thin, are the owners. The Black Spar is now under a bond to St. Louis parties, towns, and all because of an immense ledge of ore being uncovered. The ore was cracked up as going into the hundreds through assays. Everybody-believed it, but it turned out differently. Bad management influenced the leading shock. In holders to invest unwisely, and as a result the or no returns. The entire camp received a can retrieve its backset. Several parties working which only its good mines were theirs and hard labor knew or the fund at their swerral claims perfectly can be found from the following, from a gentle-camp, and from the following, from a gentle-door shows some wondrons prospects.

About the state of the full of the following of the following.

towns, and all because of an immense ledge of

is known as the Philadelphis Company. This company was quoted far and near. A rush was made to Muldoon from the Wood Kiver

Muldoon district, just 25 miles east of Bollevue, says the Berald, had a boom in 181 and '82 by the Muldoon mine and mill, under what

Free Milling and Galena Claims Showing
Up Well-Bright Future.

try along our southern border and increases our interests in the region with which we have been brought into close connection in point of time.

All shore the ince esstward California's industrial i



try along our southern border and increases our The opening of the Sunset route is minister-ing to the growth and development of the coun-

An Important Texan City.

VIEW OF THE CITY OF EL PASO, ON THE RIO GRANDE, TEXAS.

AT Helens, Montans, a well 30 feet in diameter is being anneter began flowing anneter is being anneter began flowing into it at a despth of six feet, and 400,000 gallons of the waster were being pumped out every 24 hours by the contractor. The well will be sunk to a depth of 35 feet, and then work will be commenced on another, if it is found that the first menced on another, if it is found that the first wall not furnish sufficient water.

Fence Law Orserver,—The Secretary of the Interior is informed that the law of Feb. 25, 1885, to preven the mere seemershy complied with throughout the West, especially in Arizons and New Mexico. the sunoyance and expense they are now being abjected to through the owners of patents, who in too many cases look mainly to the profits, regardless of justice, in their motives the profits, regardless of justice, in their motives to many cases look mainly to the and extinue for intringement, It is their policy of their patents, and extinue for intringement, it is their patents, and their patents and their patents and their patents and their patents are their patents, and the patents, and their patents, a

THERE ought to be as perfect an understand.

THERE ought to be as perfect an understand. The well will be sunk to a souther, if it is found that the first ween the boiler said the piston. The lather will not furnish affects water.

Anorezs' Preseur Outlook.—The mining stands still, if the piston is stuck the steam outlook for Angels, Calaveras county, never ap.

V' L' DEMEK.

egengasi gaiwolfot ett to sur exem ot beniarte most cases approximately correct, we felt con-340,000 against \$14,690,385, the figures given by J. J. Valentine, superinteendent of Wells, Fargo & Co.'s Express. In our Annual Mining Review, published in January last, while conceding the returns of Mr. Valentine to be in ceding the returns of Mr. Valentine to be in makes the California output for the year \$19,-The Director of the Mint, in his report on the bullion product of this country for 1886,

in further remarking on the same:

most cases approximately correct, we felt contrained to make use of the following language arisined to make use of the following language in further remarking on the sollowing language in further remarking on the same:

If the value of the gold and silver extracted from the mines of California last year did not found the mines of California last year did not a second to the following language arone our sources of information on that point have been very misleading. Consulting such point a further remarks of consulting such a season to use sources of information on that point a furns, such a season to use sources of information on that point a season to one season to eight of the precedual of the falling of law peace by the product for the precedual of the season to one season to eight of having contract of the preceduation of the strength of the season to the falling of law in the sulforming to the contract of the sulforming for the output of the count of the sulforming the year, were prepared to hear of the sulforming the year, were prepared to hear of the sulforming the year, were prepared out more sulfortion in the Calico country, and the bear layer over the sulforming the year, were prepared to their one that the sulfor the sulforming the year, such one of the destruction of the sulforming the year, were prepared to the sulforming the year, were prepared to the sulforming the pre-sulforming the year, such a sulforming country, the prepared to the sulforming of the sulfor having to the sulforming section of the State, receipts from other a being the sulforming section of the sulforming the war sources having presumedly been heavy to its more sulforming the year, the year we are considering, there again we are counted with a trille sulforming to the sulforming the sulforming the sulforming section of the sulforming the sulf

-niqo edt ni benitzuj yleritne erew ew tadT

 $M_{\rm e}$  have on many occasions during the past few years expressed the belief that our annual bullion product was undergoing steady enlargemitted no accurate account can be had, though, doubtless, it is much larger than is generally supposed. sons; this being true even of the Chinese mer-chants, some of whom convey considerable sums in this manner. Of the treasure so transmost of their gold dust to the city on their pershipping it by express, as is done by the quartz mining companies, whose output is apt to be 7000 Chineses working in our placers earry the proof Chineses working to the city the most of their cold dust to the city of the is the practice of this class of mine, instead of the most of their gold to the mint, instead of sulting from injuries received by being caved apon in the Ophir. Last week another son was orippled through his being accidentally Territories. Owing to the security with which persons may travel in all parts of California, it be found in any of the other Pacific States or anderrating the earnings of the placer miners, of the placer meners as are to bones of the toes and instep are fractured and amputation may be necessary. The Henrichs estimate. A source of frequent error in computing the gold yield of California consists in H. Henrichs, a carpenter employed at the C. and C. shaft, had his toot severely crushed last

may confidently be predicted. There are even those who hold to the opinion that our output

haps accelerated for a number of years to come,

That this increment in the output of our gold and silver mines will be continued, and even per-

late having occurred within the past 18 months. the most marked advance experienced of

credited, notwithstanding its evident sound-

t, a view that has in some quarters been dis

Director conclusively shows, the figures of that to see our highest one as above expressed, the report of the Mint

bring into their midst a very undesirable ele-ment known as the "Cochise Colony." It is voted a good deal of time and money to the question of immigration, with the result to THE people of Phonix, Arizona, have deeradto owt to staio; the machinery and his fingers badly mashed. One of them had to be amputated, as also the

shot in the hand while gunning.

The eldest son, an industrious young miner, died a short time ago from blood-poisoning, re-

family has been singularly unfortunate of late.

Sunday by a heavy timber falling upon it. The

Mining Accidents.

good taate, requires, therefore, that we protect our noble language in all its parts against these vandalisms that so threaten to invade it,

patriotic instinct, not less than propriety and generally preceded the downfall of every pec-ple, there being, in fact, hardly any more cer-tain sign of national decadence than this. The

The corruption of their mother tongue has

more euphoneous, besides being more in accordance with the analogy of the Washoe

this error, as the primitive sound is much the

the State to look after and endeavor to rectify It might be well for the newspapers of

Tab-ho-ee, instead of two, as is now the onsour grandest inland water had not in like man-ner been preserved, the Washoe Indians artic-ulating the word into three syllables—thus,

universally pronounced, a vigorous protest on the part of the press having saved the word from such threatened descoration. It is a pity that the original pronunciation of

the Yosemite Valley from four to three syllables, pronouncing it Yosem-ite instead of Yosem-i-te, as it should be and as it is to see and se it is now

tested a popular tendency to reduce the name

viated to two. Years ago there was maniin two syllables instead of three, as it should be. Farallones, another Spanish word of three syllables, has in practice been abbre-

the term Sho-sho-ne, the name of an Indian tribe in the State of Mevada, is pronounced

that the herd did not consist of jackseses. In the list of geographical names appended to some, if not all, the school geographics in use,

there in the early days. Let us be thankful

leland, this name having been given to it be-cause a herd of these animals were pastured Alameda shore, and now usually called Goat This mame was also by the Spaniards applied to fitness, was so much more agreeable to the ear, name, Yerba Buena, which, besides its greater Frisky, an indignity the place almost deserves to have put upon it for discarding its original pretty soon the word will be transmuted into called Frisco, a contraction many vulgar persons use when speaking of the metropolis of the Pacific Coast. This nestiness tolerated, and Jo-sy, there deing no telling the extent to which these adominations may be multiplied. They have now a mining district in Utah converted into Valley-jo and San Jose into San be tortured? Left to the vagaries of the popular famey, it will not be long till Vallejo will be corrected, who can guess into what grotesque shapes the best-established words will finally shall be suffered to go on unrestrained and unwhich no ordinary etymologist can find out. It this half of disregarding all linguistic rules

Our Geographical Nomenclature. easen of increased prosperity. advent of the fall months, Buch improvement has taken place of late in the Cometock mines as has led to the erection of a number of new mills, and promises for the lode a prolonged water in that stream begins to increase with the nounced Makosamy and Makolamy, as is comadvent of the fall months. Such improvement

Few countries have derived their geograph-

pecting, have not been the discoverers of any new and unnamed localities, and even if they had been and had sought to designate them by never done much in the way of pioneer prossaid of no other race or nationality. One reason for such absence of Chinese names, even in the minng districts, is that these people, having State. We have a Chinese Camp, a Chinese Gulch, etc., but not a place the name of which is distinctively Chinese, a thing that can be ers almost since the first organisation of the ontaining at the same time a few terms deical names from so many different sources as has California, her vocabulary, while made up mainly from the Indian, Spanish and Buglish,

purely Chinese names, such is the repugnance to the Mongolism, and everything pertaining to him, that such names would have failed of

That the saintly prefix San or Santa attaches to so many names in Central and Southern Caligeneral recognition by the whites.

that not a natural object, town or locality in California bears a Chinese name, notwithstand-ing that people have been here in great numrived from the Russian, Hawaiian and various other languages. It is a singular fact, however,

the patronymic of any of our distinguished they have not in naming the counties, large towns or other important localities reproduced States of the Middle and the k'ar West; in that Padres, and with greater propriety indeed than has generally been observed in the other new task of supplying names for the remaining four-fifths of the State, have done their work with more fitness and sense than did those old тоге generally весилат патиев. The Americans, to whom has been left the rivers, monntains, and other topographical features of the country the Spaniards applied cisco bay 500 miles south to San Diego. To the along the coast belt stretching from San Franplace happened to be dedicated. Hence the arge mumber of these sacred names met with whom the day on which they arrived at such place they came to after that partioular saint to lic priests whose rule it was to name every new civilized men to enter the country were Cathofern is explained by the fact that the first

saintly eponyms to the coast tier of counties could not well be avoided, as large districts had been given. The attaching of so many of these lin nor a Jefferson county in it. To the counties of California, with only 'the exceptions above named, Spanish, Indian, or other suitable original names, such as Alpine, Lake, etc., have public men, except in a few instances where the public men, accept in a few instances where the bistories of these men, as in the case. I there is some manner identified with that of the coast. This is one of the few States in the Union that has neither a Washington, a Franklin in the that has neither a Washington, a Franklin in the states in the few states in the Union that has neither a Washington, a Franklin in that have a few states in the few states and the states in t

that section of country.

Having so enriched our geographical vocabpreviously come to be identified with the old in missions and the extensive ranches found in

nounced, indecently curtailed or otherwise cor ulary with these beautiful and for the most part appropriate names, it behooves us now that we preserve them from being mispro-

estate at the moreover of the solutions of the securies, solut esed to the solution of the sol fornis mingling much wice for the proper pro-ing residents, adopted largely the proper pro-nunciation of the words belonging to the rising from that beautiful language. But the rising attempt to speak. The earlier settlers in Cali-fornia mingling much with the Spanish-speakrupted, the tendency among the American peo-ple being to emasculate and debase not only their own but every other language that they their own but every other language that they

talk about Alameedy, Sieeree Mevaydee, San Already half the inhabitants of the State painful accident in his quartz claim. In oiling the water-wheel his right hand was eaught in supposed to be heart disease, On Wednesday last Al. Colby met with a and Virginia mine last week. Cause of death Edward Hinch was caved on at the Monte Cristo mine, Six-Mile Canyon, last Tuesday, and had a leg broken, besides being otherwise badly burt. Michael Hurley was found dead in a drift on the 1500 level of Con. California and Viveinia mine last week. Chause of death and Viveinia mine last week.

As a consequence there has been a rush to the new locality, many ledges having been taken up and a district formed, In the course of a Colton, San Bernardino county, caused by the discovery of a number of gold-bearing lodes that are reported to assay well in that metal. curred during the past week in the vicinity of ment attended with a local atampede has oc-

Something like an old-time mining excitenot surpassed by any other industry, even in this era of railroad building and land booms, rogiv a fitw gaiworg si bas blodtoot and a tog and alatem aucicerq edt tot gainim to aseniaud these far outlying regions seemed more prospectual than at present, From distant Alaska to Mexico, and from the shores of the great peaceful sea to the basin of the Mississippi, the passions are the states and states are seals as a season of the material and the present of the season of the seas and where, but for these, all would be a solitude and an industrial desolation, and never have isolated camps, the scenes of active operations, the north, east, and south, we see a great min-eral domain dotted over with mining towns and

province of mining during the week just closed. Looking off a thousand miles and more toward pecially eventful has transpired in the broad ese gaied tuodtiw gaitseretai si tadt douM

Passing Events.

Business Announcements.

GOOD HEALTH.—Hints for the Sickroom; Can Cancer be Cured; Strange Effects of a Bee Sting, 1OS.
Cancer be Cured; Strange Effects of a Bee Sting, 1OS.
of California, Nevada, Artzona, Colorado, Idabo, Mourang, Nevada, Artzona, Colorado, Idabo, Mourang, Espa, Rencisco Stock Board, Notices of Meetings, Assessments, Dividends, and Bullion Shipments, 1OS.

Tron; The Canses of Boiler Explosions; Steam and Water Pipes, I.O.S.

Water Pipes, I.O.S.

Water Pipes, I.O.S.

Water Olemistry: The American Association of Benner, The Philosophy of Toe-Oreans; The Chowning Glory of Modern Chemistry: The American Association of Science; The Telephone, I.O.S.

Water Olemistry: The American Association of Science; The Telephone, I.O.S.

Water Olemistry of Toe-Oreans; The Common Sense in Emergencies; Steam Waste, Through Whistles; The Chemistry of Marker Through Water T

MECHANIOAL PROCRESS.—Fibrous Steel vs.

Vexas, 191.

Vorse, 191.

Vorse, 191.

Vorse, 191.

Vorse, 192.

Vorse

EDITORIALS.—Desuippurising Gold and Silver Oves, 97-101. Pessing Events; Our Geographical Monacolature; Mining Accidents; Our Geographical Fronts in 125, 100. Labor in Demand; Lixivation of Silver tores; IOI. Labor to Demand; Lixivation of Silver tores; IOI. Labor to Demand; Lixivation of Silver tores; IOI. Lixivation of Silver tores; IOI.

TABLE OF CONTENTS.

Saturday Morning, Aug. 13, 1887.

DEWEY & CO., Patent Solicitors.

SCIENTIFIC PRESS PATENT AGENCY.

Entered at S. F. Post Office as second-class mail matter Our latest forms go to press on Thursday evening.

One meh.....Addregs all literary and business correspondence and bratts for this paper in the name of the firm.

Per Line (agate) ..... 3 most 1 month, 3 mos. 12 mos. 19 most 10 most

Advertising Rates. Towns of Subscription.
Annua Jahren of Subscriptions and Annua and Annua Annua Subscriptions of St. 50 per senior.
The subscription of St. 50 per senior.

Opec, 220 Market St., V. E. cor. Front St., S. F.

DEMEX & CO., Pablishers.

HIMING

GIENLIFIC DRESS

Mining Machinery—Saveze, Son & Co. Machine Shop—S. Standish, Gridley, Cal.

upraise above the 1435 level, and, although unfind be determined.

The development of an entirely new body of high-grade ore in the Con, California and Virginia mine is announced. It was struck in the level and although unbe made and the prospective merits of the new ew weeks further tests of the ore will no doubt

consent, been contracted into Walupe and Jesus Mayteeo, etc., Guadalupe having, by common

expected, is believed to be importent. Many Marvier long ago. So, too, most Ameristamps in the mills on Carson river have been they mean San Ken-teen and Marien, Why rid of some of them,

Why rid of some of them, otai betqurroo (de-ser-daM-2002-yad) siraM

es it seems at first glance.

the richness and extent of the deposits remain-ing to be worked, the idea is not so preposterous

bas gaining to themstraged views at ebam asset

maximum production reached in the past, and when we consider the improvements that have

of gold will in course of time be restored to the

Lixiviation of Silver Ores.

A Description of the Russell Process.

[NOMBER 3']

Fitting Up of the Lixivistion Plant.

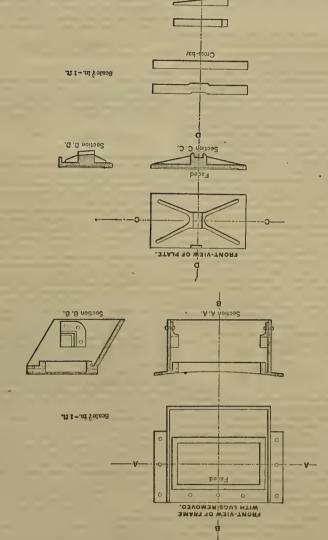
Each of the storage tanks and the extra solu-tion tank is provided, for heating the lixivia-

aworla ai doidw 10 noistenestration of which is shown position by foreing down a 1-inch rope. Тре annular space described above, and kept in to a diameter 6 inches greater than the inside of the vat, so that the ends can be pressed into the The latter, No. 10 canvas duck, is out nular space, forms a foundation for a filter-cloth the slats and the circular strip, but not the an-One thickness of stiff matting, covering fastened round the slate, leaving an annular space, 3 inch wide, between the strip and the the exerces of the vate as clear space, if it is the same of a serial all the same of a serial at the same of a serial at the same of a serial and a serial as a s

sverywhere. Between the ends of the slats and

rubber, is inserted in the center of the bottom. I in the accompanying drawing, is fastened to the

being stringent in some of the mining districts of Southern California and in Central and Morthern Arizona. miners are in like manner needed, the demand west of Belmont and near the center of Mye county. In other sections of the country good Belmont and the Union district, situated to the 20 or 30 being needed at one place, 50 at an-other, and so ou. Among the localities dis-tressed for belp are Tascators, Bullion, Tybo, in many of the mineral districts, more especially in the central and eastern parts of the State, care for it. Over in Meyada miners are wanted help cannot be got to pick and dry or otherwise formle, want more hands than they can get. In many parts of the State greek quantities of fruit will be left to rot on the ground because inches in diameter, and made of lead or hard The discharge pipe of the lixiviation vate, 14 elia ai srevolque de sesse of employers in Calieach tank can be used separately. Coast at large is denoted by the fact that many branches of business are short-banded. The farmers, the fruit-growers and canners, lixiviation vats. Valves are so arranged that The storage tanks are connected with each other and with a 3-inch piper rand mith a 3-inch piper the The generally prosperous condition of the in-officer and the prosperous and the Pacific the bottom, and connected with a steam pipe. about 70 feet long, placed 3 or 4 inches above tion solutions, with a coil of 1-inch lead pipe, Labor in Demand.



DETAILS OF SLUICE-GATE FOR LIXIVIATION-VATS,

cates with the filter press pump, All vate and tanks should be painted on the outside with white lead or sephaltum varnish. The filter press sump is provided with a false bottom, sloping to the outlet which communinto a trough leading to the solution sump. piece of pipe passing through the staves 4 inches One of the elbows is attached to a sho drawn by a swinging pipe, 23 inohes in diameter, standing inside of the tank. This pipe has a joint, formed by two elbows and a nipcharges the sulphides into a trough leading to the filter press sump. The clear solution is ing through the staves close to the bottom, diswith a steam pipe resching close to the bottom. The precipitating tanks have two outlets. A short piece of 3-inch pipe with valve, passsodium sulphide manufacturing tank is provided frame is protected by asphaltum varnish. The the same time forms a gasket. The cast-iron the filter. The gate proper is covered with a sheet of rubber which protects the iron, and at It is secured by a threaded cast-iron flange, wat by iron bolts bedded in white lead. Its bolted to the outside. The bolts holding the bottom should be a inch below the surface of

The number of lixiviation vate, of dimensions given above, necessary for works of stated capacity, will vary with the time of leaching John W. Mackay's is.

so that a passage for the solution is establish side of the slats next to the bottom is out out in several places, & inch deep and 3 inches wide, crews, bedded in thick white lead. The the injector is in operation. The false bottoms for the filter, and the latter itself, are prepared as follows: Wooden slate, 1½ inches high and I inch wide, and separated I inch trom each other, are tastened to the bottom of the wat by the position of the wat by the latter inches are tastened to the bottom of the wat by the latter inches are tastened to the bottom of the wat by the latter inches in the latter inches the l ing injector a T-joint receives the pipe for cir-oulating the extra solution, whereby the latter is returned to the vat if the valve is closed, and trough to the other. Mear the discharge end of the pipe is a valve. Between it and the Kortbe turned from one partition of the distributing trough to the other. Mear the discharge end of Visse as a roupil edt tadt os eqiq egradeib edt to standing above the precipitating tanks. A short piece of rubber hose is attached to the end tion is for solution, the other for wash-water), irte double distributing trough (one partinected with a Korting injector which discharges lead. This pipe, slightly inclined, flange pass through the bottom, the heads being countersunk in the wood and bedded in white

shipped to Guaymas, thence by rail to Nogales, and from that point by train to Tombatone. brought to San Francisco; from there will be of lumber within 90 days. The lumber will be in Tombatone soun. A contract has been en-tered into for the delivery there of 600,000 feet THERE is probably to be some big work done

rying horn silver. Recently a vein of the same kind has been struck, and Richards & Callinan are now making a shipment. THE old Promontory mine, at Darwin, in years gone by yielded some high-grade ore car-

ous and of excellent quality, and can be put on the market here as soon as the railroad is & Santa Ana railroad is completed down there and will soon be opened. The coal is bituminto market was found, are now about to be worked to their full extent, as the Riverside statu quo till some way of getting the coal out

could induce the landless masses to go and oc-There is land enough to be had and on easy enough terms, if only the Anti-Poverty party

laboring no harder than they do at present.

work for a mere pittance, being often without any work at all, sooner than go out and make homes on these lands, which they could do,

bas seitie edt ai aismer lliw aem beibod-elda to acre and where wood and water are plentiful and the climate excellent. And yet multitudes

mort dosor of eldissoq ei il. vongquoso riedt lier yd ebir s'yab llad a nadt ssel ni ytio sidt boog le bnel biddu evedw yrannon le enolises req 32.1% le eise nad ta shubo ded nas ytilanp littigia en steem bare boom evedw bare esse

of the idle masses to go and settle on the public domain, open both here and in Australia to

It is a damaging commentary on the Henry George theories of land distribution, this neglect

nprovements having been devised for the pur-

been found expedient to give them employment on the public works, special and little needed ber of idle men had become so great that it has

new and sparsely peopled countries this seems to be the case. In New South Wales, with its comparatively limited population, and its vast area of sgricultural and mineral lands, the man had become or great that it, here

there appears to be a surplus of labor in most other parts of the world. Even in some of the

While there is enough work for all on this coset

opened, at \$5 per ton. As the mines are very extensive, this will be a very important enter-prise for this section. THE Riverside Press says: The coalfields down the caryon toward Santa Ana that have been prospected for some time, and were left in

Secretary of the Treasury, in anawer to recent inquiries on that point, bounty for the discovery of workable deposits of tin in this country. This, however, is not the case, as appears by a letter of the Assistant-No Bounty for the Discovery of Tix.— The idea is entertained by some that the Government of the United States has offered a

\*A paper by C. A. Stetefoldt before the American Insti-tute of Mining Engineers.

THE bonanza kings of Zacatecas, Mexico, are

The Dairy is the name of a new mine recent-ly located near the fown of Weaverville, in Trinity county. The ledge is 18 inches wide and well defined, the ore going about \$50 per and on the areas

fixed fact, will give our Bodie friends a boom. We are glad to think that something is coming their way to fetch them up out of the wilder-

railroad, which seems now almost as good as a

THE extension of the Mevada & California

employed to cool the ore, so that it may be conveniently removed from the cylinder to make room for a fresh charge.

Meantime jets of steam or other means may be

ore afterward removed for amalgamation.

complete. The heat is next shut off, and the

there is no nore sulphurefed hydrogen given of a fermined by which condition will be determined to the contract of the contrac

gen gas, as compared with steam, causes it to descend to the bottom of the cylinder, from whence it is expelled by the pressure of steam

posed to the action of the steam, resulting in a speedy and thorough treatment of the mass. The greater gravity of the sulphureted hydro-

side of the cylinder, are in quick succession expulverized iron pyrites. By tumbling the ores in the cylinder, portions of the ore, properly bested by contact with the slowly scending hot

may usually be supplied at small cost by adding smount of oxygen, the deficiency in sulphur

desired as had as furnish the required

with the hydrogen when sach a decomposition eains a sufficient amount of sulphur to unite shat is required for these purposes. If it is is con-

pounds pressure of steam per square inch is all mese, and also to force the heavy sulphureted bydrogen gas out through the said disoharg-by of the said that the said disoharg-and the said that the said that the said the said the said that the said the said that the said t

ore and cause it to penetrate deeper into the heating the steam, some pressure is required to force the steam into close relation with the

thus stopping the chemical action, and, further, or making the amalgamation of a large part of the gold and ailver extremely long and difficulty in out impossible. In addition to superioral, if the steam some presents is received.

the compounds are most easily decomposed. Above 600° some of the ores will become mechanically coated with ritrified gangue,

the temperature below 600°, the limit at which

(Continued from page 97.) Desulphurizing Gold and Silver Ores.

(To be Continued.)

have proposed (Trans., xiii, 104) has so far have proposed (Trans., xiii, 104) has so far been done been practically applied, nor has this for this with any other new method. A plant for this purpose should always be adapted to local circumstances, and its designing must be left to cumstances, and its designing must be left to the designing must be left to the designing must be left to cumstances.

press; second, because neither the treatment I orgestion process proper each with the pro-duction of the sulphides as they leave the filter

sulphides, for two reasons: First, because the qisosəb s otni og ot notinesini ym ton si tl. to tnemtnert edi vol berinper tneiq edi to nois

Plant for the Treatment of Sulphides.

noitrog a sesso laiseque in that in esses a portion

revise bas reques gaiteartxe rel bebivorq ed cals

from 2 to 4 tanks for precipitating the sul-phides. Properly constructed tanks should

be from 2 to 3 tenks for precipitating lead, and

sary number of Korting injectors. There should

be obtained), 2 storage tanks for sods solution,

donnas abos enuq behivorq) das-abos guivling

for manufacturing sodium sulphide, 2 tanks for storing the solution of the latter, I tank for

some preliminary tests have been made with the ove to be treated. A mill of 50 to 100 tons daily capacity will always require 2 storage tanks, I extra solution tank, 2 sungs, I tank

with the weight of the ore per onbic foot, and can can easily be determined for any mill after

or the number of tons of ore in rotation, and

I filter press, I solution pump, and the ne

from the first wash-water. It is hardly ne

of this plant may not be required.

shove through the discharging nozzle.

соп оп гре вуегаge.

#### SCIENTIFIC PROGRESS.

#### Scientific Deductions.

Most of our readers are familiar with the facts connected with the discovery of the planet Methodowery of the planet Methodower of the Methodowe long before it was seen, from certain astronomical aberrations that could only be accounted for by some unknown disturbing body, the location of which was pointed out and which was finally found just where it was announced to.

which was pointed out and which was flaully which was pointed out which was pointed when yound just where it was announced its should loved for.

The discovery of the greatic birds of Key Scaland is another familiar illustration of the perfection to which scientific deduction has been carried. The discovery of the Dinovanish been carried. The discovery of the Moon, is the illustrious roologiet, Richard Owen, is famous as one of the most notshele lease in the history of science. From a single imperfect bone—a femur broken at both eads—Owen de history of science. From a single imperfect bone—a femur broken at both eads—Owen de history of science. From a single imperfect bone—a femur broken at both one badden in the costriol in size, formerly inhabited in 1839, aroused from the comparison of many tragments of from the comparison of many tragments of from the comparison of many tragments of brad deed in New Scaland in oreased the number of species to 11, olsased timbres forms which hadditions in 1830, he had intered beet five feet in pight, Still later three geners and varying in size trom a kind or over five feet fingh to one—the Dimovance in the comparison of many tragments of three geners and varying in size trom a kind or over five feet fingh to one—the Dimovance in the comparison of the Dimovance was an anone instances arrapassed, and that birds must have existed in New Scaland whose hight atteined fully 14 feet, or twice that of the largest inced the large of the large.

Waste of Fuel.

The wax or tallow of candle is turned into gas before being burned in the flame. This says as exchange: After the candle has been burned in the flame, the flame in the sunder the work and yold a says as exchange. After the candle has been burning a few minutes blow it out a flame running them work the flame running down and work, the flame running down and relighting the candle. What appeared to be relighting the candle. What appeared to be relighting the candle. What appeared to be developed to be down and with the flame. Soot or unconsumed which the wax or rallow of the candle had been cold saucer in the flame. Soot or unconsumed which he was or rallow the flame, however the gas into candle the war or rallow the flame in the flame. The cloude of smoke stoned has been cooled below the femperature of see does contained to accompanied by large volumes of smoke to may from the flame in the flame in the flame is however, a lost from imperfect combustion which may or may not invisible gas called carbonic oxide, which, if completely burned to earbonic oxide, which, if the flame is in the flame is a the companied by large outling an intrisciple gas called carbonic oxide, which, if completely burned to earbonic oxide, which, if the flame is hide consumed. The imperfect combustion which he way only or flame in the flame is hide carbonic oxide, unless the temperature is at the candle flame is hindered by contain goint, will not be consumed. The imperfect of the flame is the flame in the flame is the feminumed.

Incand the flame is the flame to be entirely consumed.

INGANDESCENCE.—The word or term "incaning not commonly understood, though scientifically so simple. It is a white heat, or the glowing whiteness of a body caused by intense glowing whiteness of a body caused by intense on the subject, with their brilliant horseshoe of glowing falament, attract no more attention on the subject, with their brilliant horseshoe of glowing falament, attract no more attention the latter are easily and generally known, while the electric lamp is not so readily comprecation of every looth, where the complete of gas are redescence. Thus the molecules of gas are redescence. Thus the molecules of gas are redescence. Thus the molecules the by incompression of every gas thane is where combestion is taking place, and from there comes the heat produced by the triction of a molecule of the molecules, the bine is, theoretors, that with the electric lamp it is the ready of every seather the completion of every and the molecules and electron of every seather the carried compelled to go brough a fine a decrease of the seather of the completion of a molecules and produces the carrior of the seather of the produced by the triction of an electric or of every seather that the the the seather of the seathe

#### Steam and Water Pipes.

When vertical rieing lines pass through floors, their location, says a contemporary, should be precisely indicated so that rimmens may be inserted in the beams and the necessity thereby prevented, which would exist if such preparations were not made, of partially cutting beams away.

away.

Vertical pipes, rising lines, and all pipes
should, if possible, be left for easy access.

When the vertical pipes are not to be left expossed, recesses in the walls may be provided.

They should be quite straight to prevent off.

They should be quite straight to prevent off.

Sets in the pipes, and ample room should be sets in the pipes, and ample room should be set allowed at the bottom so that vertical drip connections may be secured. These recesses should be covered with in on the set of reshould be covered with in on the set of reshould be covered with in on the set of reshould be covered with in on the set of reshould be covered with in on the set of reshould be covered with in on the set of reshould be covered with in one set of the set of the

Vertical pipes may also be inclosed in wooden Yortical pipes may also be inclosed in wooden When pipes are inclosed not less than two moles space should be given between pipes and mings, and casings abould be lined with tin iron.

Exposed pipes that are nearer than two inches to the conditions and cashing a fine.

Exposed phosid have tin or iron inserted between them and the wood.

It is not desirable to build dues in centers of the wood.

It is not desirable to build these in centers of pipes, as they cannot walls for vertical lines of pipes, as the stand sheathing in frame dwellings, as this space is with difficulty made sir-tight and a good deal of condensation to since a caused by the currents of cold air which passe up from cellar to places below roof and above to ceilinge.

Horizontal connections to radiators when become an above about day the currents of cold air which passe not deal of since and above low should pass between beams; crossing beams not desirable to cut notches in beams of seems into deal of the steam cot desirable to cut notches in beams of seems in ord desirable to cut notches in beams of seems in the seems and it is always preferable to have one nections to radiators above the should passe between beams; orossing beams are desirable to cut notches in beams of seems and et is always preferable to have complete, and it is always preferable to have complete.

MECHANIGAL PROGRESS.

The fendency to substitute steel for iron for many uses has been been to a many uses have been specially noticeable for seaveral years. But it is well known that recording the steel for iron several years, but it is well known that the asked of or iron has received a decided cheek. The American Manufacturers alludes to this many purposes, "It was discovered that the steel that to receive it advantage over iron, yet, in use, the lack of fiber in the steel placed it at instance gave it advantage over iron, yet, in use, the lack of fiber in the steel placed it at its discovered that in the present state of the art of inc. In a word, for many purposes, it was a decided disadvantage when controlled with their and in the steel that in the present state of the art of also over in the steel of the steel the steel at a price that would enable the steel to compete with the iron, the use of steel, for the part, and recourse was spain had to good fibrous iron. Fibrous Steel vs. Iron.

comes an important one. Large consumers of iron and steel, especially those consumers who use these metals in places where they are subject to jars or constitution of steel for iron, because of this lack of fibrons structure, and are cause of this lack of fibrons structure, and are meris with steel. A steel with a fibrons structure, and it is now in a steel with a fibrons structure is an immediate and large demand for such with an immediate and large demand for such with an immediate and large demand for such Altogether, the subject is an important one.

#### The Causes of Boiler Explosions.

The Causes of Boiler Explosions, cently published a paper by Mr. Hochereau, formerly an artillery officer and director of the causes of the formerly an artillery officer and director of the consell of the causes of the formerly an artillery officer and director of the causes of the cames of the causes of the constructions of steam boilers, which are negative and professions of steam boilers, which considers the construction of the construction of the came of the came and calculation. After citing unnerse as mixture of more or less carbureled by drogen, he concludes as follows: I. In boilers gas produced in the boilers. After citing unnerses, and pure or carbureled by drogen, he concludes as follows: I. In boilers is an arthure of air and pure or carbureled by drogen, he concludes as follows: I. In boilers that a concludes as follows: I. In boilers as a mixture of air and pure or carbureled by drogen. S. Boilers fed with water containing organic material and calculating the came of the conclusion. After other the conclusion of captures of a sir and more or less carbureled by drogen. S. Boilers fed with water containing organic material and more or less carbureled by drogen. S. Conclusion of a capture of the process, and the concess, and the concess of a conclusion. According to the process of an arbataces, and the concess of a capturely and derived from their decembers the cargine is not running, since the gase. The requires in natrows the carbon of globular which is a that the fact on the stone of globular part of the process of a capturely depth, and foor of the former of globular actives in the cargine is not running, since the gase. The capture of the process. The cour when the big produced through the dangerous moment is that the fact and the capture of gentling up to the

to compete with the iron, the use of steel, ray many purposes, was abandoned in whole or in part, and recourse was again had to good fibrous "Off."

"Off. course, a material that can be called fibrous steel has been produced for many years, the cost of making into the cost of produced to produced for many years, the cost of making into the depended upon, the cost of making iron, and, indeed, for many purposes these steels cannot be depended upon, ing has to be used.

"Quite a number of attempts have been made to produce fibrous steels at low produce fibrous steels at low produce divine a number of attempts have been made to produce fibrous steels at low produce fibrous steels steels at low Experiments in Producing Fibrous Steel.

Excent experiments in Producing Fibrous Steel.

Recent experiments in Producing Fibrous Beteel when the urgent need of such a product, have directed the serious attention of steel-makers to the possibility of producing a fibrous steel. Messre, Morwan, also of Co., of the Dritannia Works, Middlesbrough, with the assistance of Mr. F. Howson, also of Middlesbrough, have produced by a patented process, the origin the manufacture of a superior and special quality of fibrous iron which we quote: "We claim the manufacture of a superior and special quality of fibrous iron which may be otherwise called fibrous steel by first granulating cast steel and then welding that granulating cast after a free and then welding first the manner of a puddled blim frest framulating for material and treatfrom it steel is by no means a new one. Granulating from a process has been carried a modified form of this process has been carried a modified form of this process has been carried on a several places in Eugland, but has never on a several places in Eugland, but has never out that the cost of granulating does not acceed out that the cost of granulating does not exceed as shilling a ton.

Another Process.

Another Process.

Mr. B. H. Thwaite of Liverpool and Mr. A. Stewart of Bradiord are the inventors of a process the object of which is to combine something like the Bessemer process of rapidity with the advantages of control possessed by the Siemens-Martin process. It is mamed by the inventors "The Rapid Open-Hearth Steel Street S

The sorribidity of this Mew Invention.

Description of this Mew Invention.

The pig is described as being melted in a Stewart "tapid" outpols and flows through a Stewart "tapid" outpols and flows through a pie chest of the a mild air blast.

The remaining tourth of the charge flows the remaining tourth of the charge are subjected to a mild air blast flow far the constring tourth of the open-hearth and evidence in the open-hearth and evidence to a lowed to confuce a convertion of the metal is completed to repair or the melt open-hearth flowers of the metal is completed in the conversion of the metal is completed in the addition of sorap, or by oxidization with ore, addition of sorap, or by oxidization with ore, and at the conversion of the metal is completed in the addition of sorap, or by oxidization with ore, addition of sorap, or by oxidization with ore, and a the sorap of the conversion of the metal three or the sorap of the sorap or a seried in the addition of sorap, or by a forced and oxidization of gaseons and a sorap or the sorap of th Still Another.

Dr. Chapin of the Bethlebem Iron Works has also introduced at his establishment a process which, for practical purposes, is considered quite available. In this process, seed is made in the Bessemer converter and run into a furrace on the Banks principle, where, by rotating the furnace, a fibrous structure is imparted to the furnace.

the steel. Fibrous Manganese Steel. Fibrous Manganese Steel.

Phrone Mengenese Steel.

Mr. Hadfield, of the Hadfield Steel Foundry Compeny of Sheffield Steel Foundry Compeny, of Sheffield England, hes also seer.

tained by experiment that his places seel, becomes fained by experiment that his places a cast, becomes plunging the steel, bested to a yellow heat, in the politing the steel, bested to a yellow heat, in the yellow a factor or wesk sulphuric scid. As is properties of this steel, this water quentility of the toughness or deceiling the steel, this water quenching as 42 per cent elongation with 168,000 pounds then yellow and properties of this steel, this water quentility of the toughness or deciling the steel, this water quentility of the toughness or deciling the steel, the disadvantages of steel strain.

In view of the disadvantages of steel strain its crystalline structure, the question of the strain that the disadvantages of steel strain.

In view of the disadvantages of steel strain its orpstalline structure, the question of the strain that the disadvantages of steel strain is of secondary to the disadvantages of steel with the strain that the steel with the strain that the strain

A TRAINED LETT HAND,—Many are the adversaring the control of the c THE TELEPHOUS.—By fixing a small mirror between the center and circumference of the disphragm of a keleptone, and reflecting from it a beam of light on a distant scale or telescope, its motion can be detected.

The American Association or Science.—
The meeting of the American Association for the Abe will be need in New York, from August 10th to August 16th. Application has been made to the principal realized companies throughout the country for reduced fares for the benefit of those desiring to attend the meeting.

TRE CROWNING GLORY OF MODERN CHEM-rater.—Prof. Bolton expresses the opinion that the crowning glory of modern chamietry is the power of producing, in the laboratory, from inorganic matter, substances identical with those extisting in the vegetable and animal kingdoms, it being known now that the same chemical laws rule animate and inanimate nature, and that any definite compound pro-nature, and that any definite omnound pro-duced in the former can be prepared by syn-duced in the former can be prepared by syn-thesis as soon as its chemical constitution has been made out.

THE PHILOSOPHY OF ICE-CREAM.—In freesting a first into a time of the cream, the oream is put first into a time of vessel and aurrounded by ice. Tim is used becased a such aurrounded by ice. This is and the orases it is a good conductor to the such intrough it was the oream is drawn through it was the cashly and absorbed into the ice. This tin vesses if a surrounding it are placed in a wood on vessel, wood being selected because it is as poor conductor, and the outside heat cannot readily pass through it to the cream. Salt is apprinted on the ice because salt has the property of melting ice, and while melting ice absorbe heat, thus making an additional draft on the vesum.

Liquin Paratriue.—Paraffine dissolves in all purper practices in alcohol and ether, if perfectly proportions in alcohol and ether, if perfectly anhydrous, forming a clear liquid, which is readered turbid by the smallest quantity of safety or aqueous alcohol. Absolute alcohol takes up only a certain quantity of paraffine two clear liquids separate quantity of paraffine oil and a saturabed solution out—pure paraffine oil and a saturabed solution of it in the alcohol. It a small quantity of latter, an immediate turbidity is produced. If sately and aqueous alcohol is brought in contact with the tistle the alcohol. It as a saturable alcohol are distinct turbidity appears. The alcohol are distinct turbidity appears. The author finds, distinct turbidity appears, of a 50 per cent alcohol, in the subdidity appears. The author finds, the subdidity appears oil freely dissolves chlorine, iodine and bromine.

Colore.—All that we know of color, its wave theory of light. Color depends upon the causes and effects, is in connection with the wave theory of light. Color depends upon the rate of the eye is in connection and the color depends to the cyc. In right waves reflected from any obtained these are about 40,000 waves to the inch, and these will librar of the eye at the rate of 447 and librar of millions of pulsations per second.

In violet there are 57,000 waves to the inch, and 699 millions of pulsations per second. The other colors have wave lights interactore, and 699 millions of pulsations per second. The other colors have wave lights interactore, are citizen these two. Color does not, there can be no appearance of a fire on a desert tanner. The chemical process called combustion going or the chemical process called combustion going the colors of the colors of the colors of the color and the color of the colors of the color of the colors of

Colone to obey the mandates of the will, the yell ender on the solid to be the will, the tell the will be will

possible to one hand unsided. By training the left hand in youth, one would be spared in such a case from spending much valuable time in educating muscles hardened by age, and unsocustomed to obey the mandates of the will,

Mining Affairs in Colorado.

Inoreasing Use of Wire Cloth. USEFUL INFORMATION,

Wire oloth is an article which has but recentty been brought into general use. Wor a long
ty been brought into general use. For a long
ty been brought into general use. For a long
ty been brought into general use. For a long
ty been brought into general use. For a long
ty been brought into general use. For a long
ty been brought into general use. For a long
ty been brought of the ty been brought of the secon even
the they generally more there are secon even
to cotton neeting, dyed in lency colors and
the they generally bore a princed landscape on the colors and
the colors are decided were
the through the color and the color and
the property that a colossal extravagance.
The interest and the color and the condition of the color
ting, is a very interest of the color
ting, is a very interest of according to the
tring, is a very interest of according to the
tring, is a very interest of the color
tring, is a very interest of the color
tring, is a very interest of the color
tring, is a very interest to provide the mean
tring, is a very interest, intring, is a very interest to provide the mean
tring, is a very interest to provide the mean
tring, is a very interest to provide the mean
tring, is a very interest to provide the mean
and more devaling. The interest of interior been
tring, the mean recessary trames at low cost, and
district the interdect of the colors, not only in a
tring, its greated a reduction has also been greattring, its greated interdects to provide the mean
and interest and interdects to provide the mean
tring the mean recessary trames at low cost, and
district the necessary trames at low cost, and
with the minimum of meobaced the most
trip is a making the efforts of interest of performent
with the minimum of meobaced the most
trip is a making the proceases through the perforated plate with
the secon has with research may a people grow family
as the are of well interpretation to surging the
cost of well interpretation to surging the cost of surging the provide the cost
trip interpretation of th dull or nearly dead, appear to be the order of the dull or nearly dead, appear to be the order of 28 males from Mondo very in sensitive to dead, and an it possesses a good ore dead, and as it possesses a good ore dead, and as it possesses a good ore dead or economical mining, it gives musual promise in these respects at least, Mot baving stodied the common dead of the ore, or having seen the veins producing the ore, or considered the oren, or speak possessed to which one common not speak positively, which should be known and settled the oren, of seed to come good ore has been sent to the orent of the orent of the common good ore has been sent to the mining and period ore has been sent to the mining one send or has been sent to the orest of the orent of orent of the orent of the orent of the orent of orent of orent of the orent of orent of the orent of orent of the orent of the orent of orent of the orent of the orent of orent of the orent of orent of the orent of the orent of orent of the orent orent of the orent of Discoveries of new mining fields and rich discoveries in some of the old campe, which were dull or nearly dead, appear to be the order of the day. The new camp in Conjos county, 28 miles from Monte Vista, is sendingfout high-

The output of the many mines about Bellevue, says the Herald, is beginning to show up in large figures, and prospects herefolore thought little of are coming out wonderfully well with high-grade ore. At the Bellevue sampler the Mone Mone and Queen of the Hills

Home Electricity—Many have failed to be laided to the fare the gas with their flager because of the layer the gas with their flager because of the layer they do wint a fast. Take a lairpin and twish it second the metal part of the burner tight enough so it will stay. Then bend one end so be as to bring it over the opening of the burner. Let the person who is to play lamp-lighter as to bring it over the to play lamp-lighter second person turn on the gas, and when the condition of amoe gight bare on a fur urg. Then let a second person turn on the gas, and when the sea of the plan in the or less of the hardy part of the late of the late

Hillies are so caree, that content of the monthly that the monthly the and Queen of the Hillies are so caree, that custom ore is relused at present. This fault lies mostly with the rail-rose are so caree, that custom ore is relused at present. This fault lies mostly with the rail-rose and company, in not supplying case. The case of the campler, and the Queen one and dimits bloore is leipt busy.

Alimie Moore is leipt busy.

Outside mines, this month, have placed an great deal of ore on the sampler platforms, and great deal of ore on the sampler platforms, and rison mine, in Lee's gulch, are placed at the 10e Garrison rison mine, in Lee's gulch, and the four the sampler platforms, and the four those, and the four the sampler platforms and two for a lease. The case of the ton, a porter of a lease to be same time the Ballevue king, in the gulch just south of Lee's made a shipment of myo an a lease. The test of the ton, a brought \$148 to the ton. The sampled \$300 of Miver in the State of which sampled \$300 of Albion, have south of Lee's made a shipment the gulch just south of Lee's made a shipment of Myo \$125 to the ton. The class the ton, tong and two \$125 to the ton. The sampled \$300 of Albion, is interested in the King, in the same tong to the fing, in the same that come, now yield and own two tons that returned \$185 or the ton. This mine shipped a great deal of or set aumner.

Is the Each Wing, in Slaughter-louse gulch, a line and two the Ead Wing, in Slaughter-louse gulch, a line was the test of or the contract of which is slaughter-louse gulch, a line was the state of or the contract of which is slaughter-louse gulch, a line was the state of or set of which is slaughter-louse gulch, a line was the state of or set of which is slaughter to the same such which is slaughter to the same such wh

A New Process.—The Salt Lake Tribune asys: Henry Hisching of this city has just secured a patent for a new process in the reduction of ore. The superioristy claimed for it consists in extracting silven, gold, lead, copper, zinc and arsenic from ores by applying chlorine sists in extracting silven by applying chlorine. Complete conversion of chlorides is obtained, and consequently complete extraction is, seanered. Mr. Hirsching's plant is located at the Passone smelter, where its success has been practically demonstrated on a large scale. vol., saint vol., we want to when the per ton. This mine shipped a great deal of over last summer.

The Ked Wing, in Slaughter house gulch, a mile east of Bellevue, shipped two tons that went \$80 in silver and 73 per cent lead.

These dew are offed to show that the smaller mines about here are doing some good work, and that which tells in loud tones for this mining district.

Wood River Ore Shipments.

Ar present the mines and mills of Oandelaris employ about 125 men. The Mount an oper-and Georgine are the only large mines in oper-ation, but they are taking out plenty of good ore. Many smaller mines are being worked, making a living for their owners and a little over.

fore, surgical or otherwise, to dislodge it, if this dilemma common sense came to the resous. Etnus I himself devised an apparatus to which he was strapped head downward, keeping his mouth open, when, to his inexpressible relief, the coin dropped from its daugerous position the coin dropped from the floor. A sword-swallower, who once lost a beyonet in his throat during one of his public performances, resorbed to similar means for reconvering it, and was sensitial means for reconvering it, and was

When the state of the state of

THE CHEAPEST DISIURECTANT KNOWN, which fulfills its intent, is made by dissolving half a dram of nitrate of lead in a pint of boiling water, then dissolve two drams of common salt in eight or ten quarts of water. When both are thoroughly dissolved, pour the two mixtures together, and when the sediment has estiled, you have a pail of clear fluid, which is the estrustant are a solution of the chind, which is the estructurated solution of the chind, and what had better of the nitrate will make several barrels pound of the nitrate will make several barrels of the liquid.

To Make a Flamor Johnt that won't leak nor burn on steam pipes, mix two parts nor burn out on steam pipes, mix two parts spread on the flange evenly, and cut a liner of gance wife.—like mosquito-net wire—and lay not the putty, of course cutling out the proper holes; then bring the flanges "isit," put in the bolts and turn the nuts on evenly. For a permanent joint this is A No. 1.

#### GOOD MEALTH,

#### Hints for the Sickroom.

The sickroom should have plenty of fresh air.

The sickroom should have plenty of fresh air.

This is especially necessary in cases of fevers.

An inch at the top of a window and an inch at the bottom may be allowed even in cold weather.

Sick persons will not take cold any quicker than well ones, if the draught does not strike them.

Where there are windows in the opposite sides there there there are with the opposite sides from the season of a room the task of ventilation is essien, but the be task of ventilation take over the patient up and let ventilation take place, at least three times a day. Keep the place, at least three times a day. Keep the opposite the patient up and let ventilation take of the patient when the settle the control of the control of the patient of any least three in the city to the off the optical will enable one to give it full off the optical of the patient will enable one to give it full world state.

off the chill will enable one to give it full ventilation.

With sick and well folks the greatest danwith sick and well folks in getting up in the ger from taking cold is in getting up in the morning. The circulation is there aluggish and exposure tells with double effect.

In most diseases there is much less heat gentrated in the body than in health, therefore hoe emperature of every sick person should be noted. If it is inclined to run down, raise it noted. If it is inclined to run down, raise it has many and the season of water bothers. The period of greatest decline is apt to be in the morning, and on till 10 or 11 o'clock.

Discrete the contract of the series of the s

In a force our negative for the person.

In a found feel very happy should this note be that dreadful disease. Under God, I have to thank dreadful disease. Under God, I have to thank Mra. Ocok for being slive today. Yours respectfully,

Rand, Maus, Hauadian Islands, June, 1887.

A little over 5 years ago my husband sent a Mr. Augustine Enos, a Portuguese merchant of Wr. Augustine Enos, a Portuguese merchant of Wailuku, Mani, H. I., to Mre. Cook, for treathact of a cancer which he had in his nose. It hocolulu, but had returned every time. Mre. Cook cured him, and the scar left is barely perceptible. Mr. Enos told me of a friend of his optible. Mr. Enos told me of a friend of his optible. Mr. Enos told me of a friend of his in Honolulu whom Mrs. Cook had cured. I left my cancer with Mrs. Cook, which she keeps in a bottle for inspection.

Another Case.

Agn Cancer be Cured?

In reply we refer to the following, and many other similar cases heretolore published:

Entrors Press:—In durhberance of your priseworthy efforts in behalf of suffering humanity. I send you the following report of my own presence the accounted on tor some years, and had been troubled their went for a year, but as I had never seen one, it never occurred to me that I was troubled that way to cocurred to me that I was troubled that way. One day, hearing Mrs. Cook tell of her success of cure to me that I was troubled that way. One day, hearing Mrs. Cook tell of her success and the sear, and the success and the success of the sear, and the success of the sear, he success and the success of the search of Montgomery of the search of Montgomery seed by. Tolsard and Dr. McLean, at their to office on the southwest corner of Montgomery and Morebrant streets. That was in Pacember, and the collect on the southwest corner of Montgomery 187S. They pronounced it cances and washed me to 187S. They pronounced it cances and washed in me to 18 sens. I want also seed Dr. Yoland and Dr. McLean, at their the next day. I then went with the brille the next day. I then would guarantee a cure. The replied that he could not be about a seed of the the same result. They pronounced it cance near Market.

It saked Dr. Yoland if he would guarantee a cure. They could be could not be but that it my like was of any value to my family, the operation would prolong it about hvy years. In Jane that, it has been of the trubing that they shall be replied that the sould not be but that it may. It shall be could not by but then the same to a transfer, and not the 6th of July the cancer came out, and by the flet of they cancer came out, and by the late the seem of any said and by the late of sever my said and by the late is the cure.

Can Cancer be Cured?

and never whisper with the physician or friends in the sickroom.

All appearance of heate is painful to the sickroom.

All appearance of heate is painful to the sickroom, bow to do them, but do them quietly and with out free said hurry. A patient will pick out and rely on a cool-headed, quiet, prompt per out fues and hurry. A patient will pick out and rely on a cool-headed, quiet, prompt per on which a sick person when he is doing anything, nor interrupt him when speaking, nor interrupt him when speaking. But the sick person hies.

Never lean against, sit upon, or shake the bed sak it; then read what they crave, and do it selection. Alever lead to the sick, except when they sak it; then read what they crave, and do it sitkle variety to the croom by occasionally changing things. If dowers are craved, except when they get desire for something solds person or avect perfumes.

Orevel, her intitle tood at a time, but give often, if they get a desire for something solds person. If they get a desire for something solds better by giving them a little tee or light broth.

Never leave in meal to meal. Sight of wepting patient's patient's morties temptingly prepared and served, and craving is morties then with care.

Sold with care. Sometimes the ordering short is a little of whatever is craved, unless the physician forbids. Sometimes the ordering short is old whatever is craved, unless the physician forbids. Sometimes the ordering is mortieved in the bed get desire of gets of patient of the bed get demy or fourl. Don't fill bid, then you can reture to graving is mortieve and dry. Change the ordering of sometimes the ordering short of sear and dry. Change the ordering of sometimes the ordering of sometimes the ordering of sometimes the ordering of sometimes the contains the section of the bed get damp or fourl. Don't load as precess of the order of the bed damp or fourl. Don't load as perfectly in the section of the bed ordered to the profession of the contains of the contains of the contains of the contains of the contai

there ever series and every on the eyes there ever state out ingular bashing that require exclusion of light; but healing.

Avoid noises, and especially the disturbing kind. Every patient is sensitive to some kind of a noise more than another. Never waken a sleeping patient for any purpose, unless the physician requires it. Sleep is the best medicine in nature.

Don't go to the bedside with a sonr face, and never whisper with the physician or friends and never whisper with the physician or friends in the sickroom.

COMMON SENSE IN EMERGENCIES.—The story is fold of Brunel, the eminent engineer, and builder of the Thames tunnel, that one day, while amusing a child with tricks of sleight of nad, he attempted one which resulted in a serious accident to himself, and at the same stime illustrated the danger of playing pranks firme illustrated the danger of playing pranks with the mouth. The trick consisted in advoity with the mouth. The trick consisted in advoity oncesting a half-sovereign in his mouth and pretending to bring it out at his car. All at once to his dismay the coin slipped down into his guilter, and there atuck in spite of every elemants.

LOON LAKE DAM.—Gastik, Aug. 6: An additional force of men went up Thursday to work on the Gal, Water Co.'s dam at Loon lake. The company will push work as fast as possible, and it is forught fast the dam can be completed this fall.

The Prospector Reperse.—The old familiar sight of a prospector with his pack-mule is again as sight of a prospector with his pack-mule is again.

EL DOPRGO.

DITCHES AND HYDRAULICS.—Record, Aug. 6:

DITCHES AND HYDRAULICS.—Record, Aug. 6:

Hill, up the Klamath river, on Wednesday. He informed us that be had made a survey for a ditch to
take water to the mine and put men to worke on the
same. A number of other new ditches have been
same. A number of other new ditches have been
ing constructed. The present has been an active
onstructed. The present has been an active
and prosperous season with the hydraulic miners on
both the Klamath and Smith rivers.

to its supposed, when that its done, that the harvest of gold will be immense.

WATER GETTING SOARCE.—Chronicle, Aug. 6; The water supply in the Modelbrune and Campo Seco Canal Co.'s ditch is reduced to the extent that closed compared for the extent that the extent that the season. In consequence of the closed for the season. In consequence of the scarcity of water the Concentrator Gravel claim, near the French hospital, is run with as reduced force of men, the mill being kept in operation only during gravel day and night, and as men employed in the french hospital, is run with a reduced force of mine to keep the mill supplied. Now the reservoir from which the water is conducted to the mill is filled during the night, and its conducted to the mill is filled during the night, and the supply auffices for the fouring the night, and the supply auffices for the during the night, and the supply affices door the season. Water for mining purposes in and about the vicinity of Angels is also becoming scarce. The Union Water Co. cannot now supply the demand of two sulcomatic box. The work of bailing out the capture and the condition of two sulcomatic box. The work of bailing out the circum mine at this place is also becoming scarce. The of work of worked faging and recover the total under and recover the total under and recover the four the mine is to be worked again, it still containing, it is thought, much good ore.

Day North March Albert March March Co. The and the containing, it is thought, much good ore.

THE BIC TUNNEL.—Protect, Aug. 5: The big unnel, near Robinson's ferry, on the Stanislaus tunnel, near Robinson's ferry, on the Stanislaus tweet, which has been under construction for more than a year, will be completed in a few days, and cearry all the water now in the river, which will leave then the river, which will leave the bed of the latter dry nearly three miles in length. It is supposed, when that is done, that the barvest of gold will be immense.

#### Calaveras.

OTHER LOCALITIES.—Dr., Plerce & Co, have run of more anough to pay at close catculstion over \$55,000.

OTHER LOCALITIES.—Dr., Plerce & Co, have run and will run soo feet in from Little buffet creek, as tunnel over 1500 feet in from Little buffet creek and will run soo feet more before they spect to cardwill be soot very too feet more before they spect to have a strike pay gravel. The Mineral Slide Co, has sociated pay gravel over the cardwill be soot the soot of their unnel by its caving. The Bader that done on their claim, hoping to etnike the gravel that do not on their claim, hoping to etnike the gravel that do not of their their claim, hoping to etnike the gravel danger and the soot of the buffet species of the buffet species of the soot of the buffet species of the soot of the buffet species of the soot of the species of the state and soot of the stands of the soot of the stands of the soot of the stands o

BIG BUTTE CREEK.—Chico Enterprise, Aug. 5;
A rich quartz discovery bas lately been made three
miles from Inskip and half a mile from Big Butte
miles from Inskip and half a mile from Big Butte
teek. It consists of two pratiallel varia of quartz a
few inches thick, with rotten porphyty about ra
few inches thick between them. The quartz and porphyty are both very rich in free gold. The owners
can pan out \$100 per day and carry the dirt and
has been traced over too feet, and free gold. The owners
in down the hill 50 feet, striking the ledge, and
leaving above them rock enough to pay at close calleaving above them rock enough to pay at close calleaving above them rock enough to pay at close calculation over \$75,000.

Other Locality or, Pierce & Co, have run
or and the control of the cal-

#### Butte.

ALRIVE,—The English owners of this property Arrived in Plymouth early this week, and it is said they intend to commence work immediately. Owing to the failure of water some of the stamps it is feated will soon have to be hung up at Plymouth.

Hatthe

Hill are on.

\*\*KEMUEDY.\*\*—Owing to repairs needed on the drum shalf, the pumping machinerty had to be supped here for a few days. The water had risen or considerably during the period of idleness, shutting of communication with the 900-foot level. A cave of the communication with the 900-foot level. A cave been unable to learn. No doubt everything will be been unable to learn. No doubt everything will be morth shaft has been put in good order, and the has been commenced. It has so feet to go to connect with the 600 level in work of subding it deepen has been commenced. It has so feet to go to connect with the 600 level in morth shaft has been commenced. It has so feet to go to connect with the 600 level in morse benefit to the minished it will be of immense benefit to the minished it will be of immense of feet in mense benefit to the miners in the way of imporving the sir, which in some parts of the mine is very close that the property of the parts of the sire of the property of the propert

ABOUT JACKSON.—Dispatch, Aug. 6: Though it as been idle for many years, the Good Hope mine, lying partly within the town limits, is no doubt a lying partly within the town limits, is no found a good property. There is a stafe on it over 100 feet deep, which has not been opened for years, but all the role lying on the dump prospects well. Indeed, the role lying on the dump prospects well. Indeed, the role lying on the dump prospects well. Indeed, the main ledge of the motiver lode, same ledge that the old Eureka, the Keystone and South Spring Hill are on.

.TobsmA

CALIFORNIA.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

to have come to the county this summer to prospect, amount god by the many rich finds and prospectual mining operations. Freeno. II) INING BUMMARY.

Placer. hopes are entertained that the General Grant mine will eclipse the Alaska and Delhi. The cleanup at the Delhi for the last month's run was first-rate, considering the fact that all the rock crushed was considering the fact of the ledge and not trom skeen from the edge of the ledge and not trom supernings. The amount realized was nearly \$\frac{4}{3}\trac{1}{3}\trace{1}\t

Fig. 600, payable immediately, low A HILL,—Hevala, Aug. 6: The Morning bard that in requires to be curshed with stanspars late so the first of the different of the mediately had so the stand with the first of the mediately by the first of the mediately by the first of the mediately beautiful to the first of t

hayo.

AT LOOKOUT.—Independent, Aug. 6: At Lookout 4 men are at work in the mine. The ledge of horn silver struck some time ago is improving daily, some days ago so tons of this ore was shipped to some days ago so tons of this ore was shipped to sell by the consendence of the severage value per seller per consendence some statements of the mine will be saved for the tonse staken from the mine will be saved for the board some seller and about September sout. At the Minietts mine five about September sout. At the Minietts mine five men are at work getting out ore. The mine is improving and the men are doing well.

PARAMINT.—The new mill at Panamint is nearly completed as far as the machinery is concerned. Purgue and holiet, shafting, pans and settles are all ready for work; but the carpenter work on the building is not quite completed. So little remains to be done, however, that it need not take long to be done, however, that it need not take long to he done, however, that it need not take long to be done, however, that it need not take long to he make the m 

America's cleanup for July was \$50,000.

Trainty.

Trainty.

ALMON RIVER.—Journal, Aug. 6: The Bloomet by disturbing with was \$50,000.

Trainty.

ALMON RIVER.—Journal, Aug. 6: The Bloomet by distulic mine is situated at the lower end of July was \$500 to go feet in depth.

July season there was sluicing water for only a little standard shout 30 feet in depth, and the pey diff aversges shout 30 feet in depth, the season there was sluicing water for only a little sand manager; it is estimated that there remains in the came over six months. For the past two years the mine and manager; it is estimated that there remains in the end of the past two years the mine for the past who years the mine for the past who years the mine for the past who years the mine for at least a year. Situated in the same retaining rich ore, of which they have enough to run the Bloomer is the Black for the past will not be a year. Situated in the same neighborhood is the Know-Nothing Creek quarts neighborhood is the Know-Nothing Creek quart mine, said to have very faitering prospects. The good ground, to a the feet in which and pays well be good at the Mark Black end for the mine property. Two miles above, F. Radelinger is puring be until from the mine for the Mark Black end and paying well.

Mew River.—The mile and arestras in the earny are all running at full speed and paying well.

Mew River.—The mile and arestras in the comp are all in running at full speed and paying well.

Mew River.—The miles and arestras in the comp are all in running at full speed and paying well.

Mew River.—The miles and marestra in the comp are all mine to the mine the same and the mountiles of the Mark Blaine guart mine, and as soon as that its rook in the Mark Blaine guart mine due by packed in from Callahan's ranch.

The miles are are such and at the becker in the mountiles and are such and are the same and the becker in the comp packed in from Callahan's ranch.

The miles are are such and a soon as that so the feet of the feet of the feet of the such the such all last week to save their cabins and other improvements, hence not much work was done there on the mines. This fire has proved very destructive on the mines. This fire has proved very destructive county, some other property also being destroyed. Bestuder & Purien ste developing a fare in time on bestuder & Purien are developing a fare mine on large. White, of Lower Springs, has a three-foot large, White, of Lower Springs, has a three-foot large. White, of Lower Springs, has a three-foot bestuder, being house of the same than through local mills and no gold saved. Lastely the ore has been offered \$1.35 per fon for such his partner have been offered \$1.35 per fon for sational partner have been offered \$1.35 per fon for sational partner have been offered \$1.35 per fon for sational partner have been offered \$1.35 per fon for such his partner have been offered \$1.35 per fon for such his partner have been offered \$1.35 per fon for such his partner at the dump whenever is seen out by the promising ledges in the neighborhood of Middle mining ledges in the neighborhood of Middle in the formation of the country thereshours will average \$30 to the ton.

going on.

Weyada.

Weyada.

Weyada.

Weyada.

Weyada.

Weyada.

Weyada.

Weyada.

This mine, located on Deer creek below the city, is a steady paying property. The last crushing pain curbing snotler lot of 45 tons, which the owners crushing snotler lot of 45 tons, which the owners sie confident will yield a muod larger amount of gold to the ton. The surplus over and above the gold to the ton. The surplus over and above the gold to the ton.

Frot, Melville Attwood, the great mineralogist and the repert of this faste, recently paid a visit to the mining sever to this faste, recently paid a visit to the mining sever of this faste, recently paid a visit to the mining sever of this faste, recently paid a visit to the mineral company. There is the debt and bring the a visit to the mineral company and bring full canding said.

Frot, Melville Attwood, the great mineralogist and the miner and mineral company and structured in the sever of this faste, recently paid a visit to the mineral company and structured to opinion that when a lower depth was reached the lode, which is now from six to ten inches thick, lode, which is a now from six to ten inches thick, would widen out considerably and still retain its richness.

Managana.

Tichness.

formerly in use flaving been insulficient for working formerly in use flaving been insulficient for working it with success.

Los Burros,—San Miguel Massenger, Aug. 6: The mines in his district continue to attact attention. The principal lodes are the Last Chance, was first made on the claim named the Last Chance on the tyll of April last. At a depth of six or eight taining gold plainty visible to the naked eye. The test in less that make to the naked eye. The test in length along the wall and 32sf feet wide, tomating parallel with the Last Chance. The Mammoth is took for the last chance of the Mammoth is depth of a depth of a feet the visible to wish a depth of a feet the visible to wide, one sassying from a feet the visible flave. The Mammoth is depth of a feet the visible to define the wile, the people have not got the ledge, but have lot so to place too. The king people have not got the ledge, but have lot so to goo per too. The king people have not got the ledge, but have lot so to goo place is not got the ledge, but have lot so to goo place in the king is one will from the fairg, and much prospecting is soing on.

Wendan.

THE BONDURANT.—There is a prospect that this mise strated near Coulerville will necessite the master now under consideration. This mine was operated by the then owner, Jude Bondurant, in the early day, but nothing has been done on it for the past 15 years, the machinery formerly in use having been insufficient for working formerly in use having been insufficient for working it will access.

HITES' COVE.—Graetie, Aug. 6; There is reason to believe this mine will be restored to some productive condition when improved machinery is put in place, and more power is proved machinery is put in place, and more power is which too feet additional fall can be obtained for the water, which supplies the power for working the mine, a lack of water being now one of the troubles experienced here.

The BONDURANT.—There is a prospect that

Maribosa.

Datwin. Gome of their mine at Datwin in years gone by yielded some high-grade ore carrying horse some by yielded some high-grade ore carrying has been struck, and Richards and Callinan are now making a shipment. Mesers. Gould and Silva see making a shipment of ore from their mine near Mearing. Some of this ore goes over \$400 per ton.

MANZANITA DRIFT.—The tunnel at the Man-sanita mine is making good progress. It has pene-trated the hill to gravel ground, and some good save in the tunnel.

CROWN POINT.—Trâings, Aug. 6: A large batch of very rich ore came out of the Crown Point year of very rich ore came out of the Crown Point year terday, from a depth of soo feet. All through the rock there is heavy gold. The Crown Point is certainly a very rich mine, although for the last few takes yery little has been said about it. The rock last taken out will easily mill up to \$5000 at on.

The Grant And The Dellati.—San Juan Yames, Aug. 5: The machinery for the mill at the Grant and it is in place. In less than ten days from this date, is in place. In less than ten days from this date, barting accidents, the mill will be running. Great barting accidents, the mill will be running. Great

Ban Bernardino.

180 Deposits.—Calico Print, Aug. 7: Two mountains of inon have been discovered about 18 Padisto. Print, Aug. 7: Two mountains of inon have been discovered about 18 Padisto of Mewberty station on the Adamtic Station of the such as the property station on the Adamtic Stations of the surface consist of solid metal, Specification of one were sent to Prof. Price of San Frances of one were sent to Prof. Price of San Frances of one were sent to Prof. Price of San Frances of one were sent to Prof. Price of San Frances of one were sent to Prof. Price of San Frances of one were sent to Prof. Price of San Frances of the station of the st San Diego.

San Bernardino.

In than any yet ornshod,

Ou the Indian Allery.—Work continues regulately, Twenty-four stamps are trunning on good uten. Two flurleigh drills are kept running and a third will be started soon, A force of about 85 men is now employed.

ARATRAS.—B. Cosseglio has erected two areastras near the Keutle mill. Ones is now in operation, and the other will be started in a few days. The tailings the other will be worked in them, after the tealings from the Druty mine will be worked in them, after while the tailings them the old Round Valley mines will be ground up. The Plumas-Eureka has struck another pay chimney, and the mine is again in a ground product of the product of the struck and the mine is again in a ground will be ground up.

THE DRURY.—Tunnel in 850 feet and the vein continues strong, with a large quantity of milling continues over in sight. Crushing has progressed for nearly two months with good results. At the end of the tinnnel a new ledge has been struck, of better quality than any yet crushed.

ORESCENT,—Bulletin, Aug. 6: Development work continues with the usual regularity. The mill has been repealed, and is now unning on ore from the lowest level of the mine. The quarts is of sversege milling quality. About 30 men are employed in and about the mine.

Plumas.

# MESA GRANDE.—Julian Santined. This is mainly an agricultural and grasting district, it is mainly an agricultural and grasting district, it contains also much minera wealth. While but it is minera wealth, while but it is a store that one is the minera wealth, while but it is a store of the rine. The book of the mines owned by Wilcox & Acker, promises to be one of the richby very rich rock lately. Blasts. Brasts. General Items.—Press Press, Aleg. 5: Reports from South Fork district continue favorable. The mines along french are turning out gold builtion at their usual rate, all the mills and ansatration at their usual rate, all the mills and ansatration at their usual rate, all the mills and ansatration of the rock mills and ansatration at their usual rate, all the mills and ansatration and windy Camp belts were fighting fire interest on the Iton Mountain and Windy Camp belts were fighting fire

CROWN POINT.—On the 400 level Mo. x crbsscut east (west wein) is our ye follow the above the above through the seast (west wein) is our ye file.

Government of the seast (west wein) is our ye follow grade.

Our through 1g feet of good ore, and ore still shows a cut through 1g feet of good ore, and ore still shows in the before of the feet wein) the drift in the same.

Our through 1g feet of good ore, and ore still shows in the bottom of the winnes, on else the best in the same. Carting out a station on the goo level preparatory to turning a drift under this body of ore at that point; also will goon eyed, it is expected the same development. On the goon open a station at the food interest and from the same development.

For the west vein development made on the too level) he seem of the weight of the same development.

For the west vein development made on the too level) he seem of the same development.

For the west vein development made on the so going will be seen out the same development.

Savores.—Enterprise, Aug. so: A decided impose the same development.

Washoe District. NEVADA.

Venture.

Venture.

Ventures.

Ventures.

Defiliated post OIL.—Free Press, Aug. 5: J. R.

Bennett, who has loosted at the Ojai, has an improved drilling machine which is remarkable for the proved drilling machine which is remarkable for the stackes per minute, the smoothness of the runmier and perfection of pumping. It discharges all the cuttings of the drill at the surface without the aid of and perfection of pumping. It discharges all the and perfect on the pull at the surface without the aid of the tools themselves. All internal apparatus is done way with for drawing up the sand, and neither ropes, tackle nor blocke as done up the drilling the tools when the hole is drilling. The drill goes through rock as well as carth. At the depth of 500 feet or more the drill drops as fast and pumpe out the cuttings the same as when near two or three five-inch wells on his place, after which well has just been completed in the Adams canyon, which yields 75 barrels per day.

Whitch yields 75 barrels per day.

Tuolumne.

Tuolumne.

Tuolumne.

Tuolumne.

Tuolumne.

Tuolumne.

Tuolumne.

MEARLY 'DONE.—Independent, Ang. 6: The feet of being through, It was expected that the next shot would make an opening. It will probably to store the would make an opening. It will probably claims will the mice of river claims will the mole expected for mining. The claims will be worked expeditionally, to accomplish them out, shihough it may be possible to complish them out, shihough it may be possible to complish them out, shihough it may be possible to complish them out, shihough it may be possible to complish them out, shihough it may be possible to complish them out, shihough it may be possible to continue them out, shihough it may be possible to continue them out, shihough it may be possible to continue them out, shihough it may be possible to continue them out, shihough it may be supposed to the tendent of the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the middle the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the made on the heavy cost of the underveture and the made of the underveture and th

PACKER LAKE MINE.—Twituns, Aug., 5: Work property on the tunnel here is being pushed as the rate of the tunnel here is being pushed as the rate of the ground frame property is arriving at the San Bronstoon. The machinery is arriving at the San Francisco. The machinery is arriving at the superintend erecting the mill. It will seem good to hear muste and George Black went up, there Tuesday to superintend erecting the mill. It will seem good to hear the muste of stamps up that way. A rich hear in the muste of stamps up that way. A rich hear in the Primrose Works. Three Gasims of 1500 near the Primrose Works. Three crecorded. A staff that sheem sumk to feet, and therein is shown a staff that been sumk to feet, and therein is shown a staff that been sumk to feet, and therein is shown a staff that we have the down from the duality westeries's cleanup for July was \$26,000.

Ventura.

California lodes are showing up fine. The shalf on the mineral generally occurs in large with and richness. A shipment to the Prescot made feeper all the time, and the ledge keeper up it is being worked of 337 seeds and except to 18,000 for the or the location of samples, and earell asmples.

To RESUME OPERATIONS.—Attangements have controlled the orations of support mines at Sam Pedro, Sante copper, it to 17 per cont. The olde at bottom of shalf the orations of states and enter thouse the effect of the present of the lingants. All, Chitechear copper, it to 17 per cont. The clote at bottom of shalf a copper, it to 17 per cont. The oration of shalf a copper, it to 17 per cont. The clote at bottom of shalf a copper, it is stored the will at once the copper, and other points. We shalf the mineral, ranging from 8 to 20 feet a copper, it as a done to the singest ever found in thickness, and said to run from 20 to 50 per cent of once were shipped from Telluride and the proper of the weighted to promise. West found the miners of the claim worth 5500c. During the week ending Monday, in Jonout 2000 for every ablance of coke Co. is running five cold & Coke Co. is running five cold of coke Co. is running five cold

PEAT BED.—Froncey, July 31: It is stated that as extensive peat bed has been discovered in Lake Township, Sully county, ten miles northeast of Township, Sully county, ten miles northeast of Township, Sully county, ten miles northeast of treat of about to the Medicine Valley. The peat covers a Wintes, Mittles And SMELTERS.—A so-stamp mill is about to be put up on the Mineral Hill mine, is about to be put up on the Mineral Hill mine, sould be the put to the Mineral Hill mine, so the gold-bearing cement property near Roovershille. Excellent prospects, it is said, have been obtained throughout the workings, and obtain proper masseement it the enterprise will, no doubt, turning successfully. The race of the Hadson mine beisting propert an earth of the Stamps of the Standod Euroning successfully, as it is each as bas caved in from the old open cut, and is not exmining successfully, as it is each as bas caved in from the old open cut, and is not exmining successfully, and canner of the standod of open cut, and is not expected to run rey plight, as it is each as bas caved in from the old open cut, and is not exmining successfully, work of breaking or end of the successfully in the cut will be commenced. The recent find on in the ground of the successfully in the cut will be commenced. The recent find on proper promise of soon developing into a splendid body of rich ore.

THE MINNIE MOORE.—Wood River Times, Aug. 6: This unine has recently introduced many modern improvements. A new 60-horse power engine has been placed, and started off successfully yespeced with fine Brussels carpet. The electric light is used throughout the works, and everything has been placed in a condition for easy and proflable been placed in a condition for easy and proflable working.

working.

The LAMOAN MINE—This silver-producer is a most possed working.

The LAMOAN MINE—This silver-producer is now in most complete trim. The deadwork bas all now in most complete trim. The deadwork bas all he most complete trim. The deadwork bas all be employed in extracting the ore. It is true find the metal of the mine may become again a dividend-paying so the mine may become again a dividend-paying one. This is what we want—mines to pay dividends as well as wages. When this is the case, mining one. This to work the month of the mining wery expert who visite is possed well of it. To: be concurringing about the gold belt, "and a mining went man to a Nimer reporter yesterday! "and a mining surery expert who visite is togets well of it. To: be surery expert who visite is togets well of it. To: be surery expert who visite is togets well of it. To: do not birth to to high for the amount of development work; but that does not signify much. The most important thing to us is that all spree that we have shown the force it was the bave shown the gold on the product of development of the many mines there, and that all that is wanted to show them up is more work."

### .ANATHOM

VARIOUS LOCALITES.—Inter-Mountain, Aug. 7: At Libby creek the placer clsims are paying \$3 to \$9 per day, and a whole lot of ground has been taken that prospects well, but has not yet been worked. There will be a big quartz camp over there, but will lake about a year to develop. There are now something like too people in the camp, which is reached by a pretty rough trail. The Wowhing about a year to develop. The lot working about 50 men, and it is generally undermore that a large increase in the plant will be made in a short time. The lote on which the company is now operating has been one of the most steadily for working, will yield still beiter. There is a good deal of setting will yield still beiter. There is a good deal of setting will yield still beiter. There is a good deal of setting will yield still beiter. There is a good which will yield still beiter. There is a good will yield still be will yield yield will be will yield yield

MINING MOTES.—Silver City Augustion mining or working.

MINING MOTES.—Silver City Augustion and the bear of the cond Hope mine; and the considered from the condition are recently as a consolidation was effected to make some freely of late; and the samples are recently as a consolidation was effected. A sample of way high fast that work had to be abardonne, and the company is a bond to company the started about the started about the started and the samples between a benchmarked by the started about the started a

In the Mohave Couatry.—Mohave Miner,
Aug. 6: The following items are reported from the
mines: A rich strike yesterday on the Aljoha. A
carload of Minnesots ore shipped to Pueblo.
There has arrived a lot of very high-grade lead ofe
ing in much more freely of late, and the sampling
ing in much more freely of late, and the sampling
works will soon have all they ore to be. Verterbury sent over a carload of ore, as tons, from the
Backberry mine, which netted a bandsome sum.
The new Golden Gate mill will be started about
Sept. tsth.

TURKEY CREEK.—Prescott Courter, Aug. 6: size it runs four feet between asile. The pay part is large. Ore samples between 350 and 400 ounces silver to the for.

Walturn Grant Transfer ounces.

Trinity District

RICH STRIKES STRIKE TORN STRIKES TORN STRIKES TORN STRIKES STRIKE TORN STRIKES. STRIKE STRIKES TO STRIKES TO STRIKES TO STRIKES THE STRIKES. A STRIKE STRIKES THE STRIKES THE

drift on the 1300 level of the Belcher is being cleaned belcher and the owners gave this belcher will be worked. The man will now be proposed, a thing never yet done by any one of the paying or will be worked. The man will now be proposed in the paying ore will be found on the 1300 confident that paying ore will be found on the 1300 confident that paying ore will be found on the 1300 lever of the confident that paying ore will be found on the 1300 lever of the confident that paying ore will be found on the 1300 lever of the confident that paying one will be found on the 1300 lever of the confident that the factor of the confident of the Chollar line.

HALE AND MORCROSS,—Work has superintendent to the the soon lever of the commence extensive operations on it.

HALE AND MORCROSS,—Work has been resumed. Since will be considered to the construction will give a boom to the whole lode.

BLOW STRIKES,—Since the constructed last winters. If the the the fact of the construction will give a boom to the whole lode.

BALE AND MORCROSS,—Work has been resumed to the construction will give a boom to the whole lode.

BLOW STRIKES,—Since the line of the Chollar line has a green for say givest distance deposit of the Chollar line.

BALE AND WORK is a suffice of the whole lode.

BALE AND WORK is a suffice of the will be capted to the sample of the confidence of the confidence

SCORPION,—Since parting the new air pipe into face the defit on the 300 level the ventilation has been greatly improved. Are now making so feet a week in this drift. The face is in a mixture of clay and porphyry, and is out 650 feet from the shaft.

Con, CALIPORNIA AND VIRGINIA.—Good head-way is making in regaining the 1600 drift. About age assay of which will be about the same as last week.

where A. Moule Spanney forward as usual in the wipres west of the Sharon shaft, with the same showning of our croascust on the tagoo level.

The four croascust on the 1300 level to control drift on the 800 level is now 300 level in the 1300 level.

The main south drift on the 800 level in length, and crosscut the 800 level is only 300 length, and crosscut in cas on the 800 level is out stiffed, with the face in croascut in the 800 level is out stiffed, with the face face of the 800 level is out stiffed, with the face in casy and porphyry.

clay and porphyry.

YELLOW JACKET.—The low stage of water in the
uson river has about put an end to the extraction
ore for reduction, but exploring work is actively
unnued.

OCCIDENTAL.—Some ore is still being taken out on the 48 level. Work is being done on the 200, 200, and lower tunnel levels.

BEST AND BELCHER.—The south drift on the 1500 level is now out 149 feet, and the north drift on the 3500 level is out 565 feet, with the face in clay and berchel is out 565 feet, with the face in clay and purphyry.

GLADSTONE.—The repairs to the tunnel are about completed, and work on its face will soon be resumed.

ALTA.—Good progress is making with the new rostamp mill. The mill building will soon be up.

UTAH.—The west crosscuts on the 472 level are
making good progress. No. 4 is out 54 feet.

BALTIMORE.—The usual quantity of ore is being
extracted on the 350 and 400 levels.

OPHIR.—The usual prospecting work is being
done on the 1300 and 1465 levels.

BELCHER.—Little doing except prospecting work.

ANDES.—Sone good ore is found on the 240 level.

ANDES,—Some good ore is found on the a40 level.

Burreka Distract,

ore developments are reported here as promise to ore developments are reported here as promise to ore developments are reported here as promise to doing some prospecting on the 300 level where doing some prospecting on the 300 level where some there is plenty of room to prospect, and where some good results are looked for. The most of this stock is easily are looked for. The most of this stock by once the self and here some time past in the East, and has for some time past in the East, and has for some time past to would be before a more thorough exploration of the mine. The cell or a more thorough exploration of the mine. The cogan shall, now full of water, would be pumped out if other companies who would one tunned the cell of the contribute something toward the expense.

Only the doing to the contribute something toward the expense.

Logan shalt, now full of water, would be pumped out if other companies who would be peneficed before by the companies who would be beneficed out if other companies who would be beneficed.

\*\*Otherry Oreek District Price Pine News, and the Exchequent before the companies of the Exchequent before the companies of the Exchequent between the Excheduent between the Exch

THEGETORY AND THE STATES STREET STREET OF THE STATES TH RICH ORES IN AN OLD CAMP.—Silver State, Alug. 5: Some weeks since Captain Frank Cook of Lowelock discovered a lead in the Trinity mount. Lowelock discovered a lead in the Trinity mount. Lowelock discovered a lead in the Trinity mount. In the content of the samples contained stace, set and Cooke of othe samples contained stace, set and Cooke of othe samples of the one of Cortex, samples of the content of the thousands. The Cortex set also be a content of the thousands. The Trinity mountains, in which the fledge is situated, are tractically mountains, in which the fledge is situated, are tractically mountains, in which the fledge is situated, are tractically mountains, in which the fledge is situated, are tractically mountains and worked to some extent. A mill was mountain and worked to some extent. A mill was a located the sature of supplies that the batter of supplies that the beautied to everywhere and paid handsomely, notwithstanding everywhere and paid handsomely, notwithstanding everywhere and paid handsomely, notwithstanding everywhere and paid that domely, notwithstanding everywhere in the sature of supplies flad to battle down the mill to warrange of the sature of the faulting as been done to prospect it below spatial attains, the dois is abstronment of the warranges of the faulting has been done to prospect it below to make the mill to be stated to any states. The mill is said to be done to prospect it below doing good work. The descrees of the Pamlico have created to any state extent. The lesses of the Pamlico have created to be mild to be done to prospect it below to work. The descrees of the Pamlico have considered, and no doubt a large shipment of gold considered, and no doubt a large shipment of gold considered, and no doubt a large shipment of gold considered to any state of the state of the pamilion will be made.

Tuscanner and the district has not been be to be the mill to be considered to the mild the doubt a large shipment of gold believe the mild to be the doubt a large strip mild to be the d

SALMON RIVER DISTRICT.—Spokane Falls Chronfiel, July 21. These mines are gaining eclebrity,
and the richness of the deposits are becoming more
evident as mines are made and prospects are found,
bighly of the prospects of this region, believing that
highly of the prospects of this region, believing that
highly of the prospects of this region, believing that
it compares favorably with those localities, Salmon
midst of some very valiable mineral lodes, some of
this, has five or six houses, and is located in the
which have passed into the bands of expitalists, who
which have passed into the bands of expitalists, who
which have passed into the bands of expitalists, who
with the introduce machinery to work them. Reliey
growing fast. The Ruby, the first mine discovered,
is down so feet, and a crossout developed a ledge
IT feet wide. DOUGI.AS ISLAMD.—Alexican, July 30: This island is separated from the main land by a deep sea channel and to main land by a deep sea channel and to make the main land by a deep sea channel said of the sland facing this channel and extending this channel and extending the cool cleet. The first discovery, known as the Paris, lies near-to-food occiling this channel and extending the channel and proceed to the channel and the same quart as the Treadwell ledge from the channel and NEM WEXICO.

WASHINGTON.

BULLION RECEIPTS.—Salt Lake Trithuns, Aug.

8: Receipte of bullion in this city for the seven months of the present year, excluding all one receipte or abipments, have been \$3,013,559,.77. The seven months produce of the Ontario mine has been: If no months produce of the Ontario mine has been: If no months produce of the Ontario mine has been: If no concess siver, \$459,509,358; produce to for easily approximately, of \$1,122,022,75, white of ore seven monthly dividends of the sample reserve fund on alver, the year, of \$20 cents each paid, and the mine is left in the stage, with an ample reserve fund on band. The \$25,000, have been paid, and the mine taleful in five year, of \$20,000, out of this the Daly company has paid four dividends, two of \$30 cents each per share, and four dividends, two of \$30 cents each per share, and the new hoisting works are put in and mine its production.

Production.

Obegon.

GEOLOGICAL.—It is said that a party of scientists from the Smithsonian Institute will aboutly be sent too in the Smithsonian Institute now. Meaheur, county, on Willow creek, in, what is, now. Meaheur, county, age and ought to furnish a rich field for investigations of this kind.

THE WALDO MINE.—Soutind, August 4: Winer a see in the midst of a cleanup in their mine at Waldo. They now have their long cut or outlet boout completed, when we may expect to hear of sirger yeldes.

ORE CRUSHER.

F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS. Centrifugal Roller

seand Shingle and Shingle Machines. Mining Machinery of Every Description,

SEND FOR CIRCULAR.

No. 45 FREMONT STREET, SAN FRANCISCO, CAL.

GREGORY & EFISBEE-LUCOP

San Francisco, Cal. Cor. Fremont and Mission Sts.,

INDORTERS AND DEALERS IN ALL CLASSES OF

VALLAS ENGINE WORKS ENGINES ENGINES' BEOS, HOIZLING SOLE AGENTS FOR

FEMENT & SON'S MACHINISTS nem haven manufig co.'s ma-chinists, tools, MACHINERY, WOODWORKING A. P. PAY & CO.'S WOODWORKING MACHINERY,

EXHAUSTS. BLOWERS AND SERIN BYND SYM BLADES. WEBBER CENTRIFUGAL PUMPS. BLAKE'S IMPROVED STEAM BICKLORD'S POWER DRILLS.

SHIMER MATCHER HEADS.

TURBIUE WATER WHEELS. BRYINVED MITTING MYCHINES

HOLLOWAY FIRE EXTINGUISH-BRADLEY CUSHIONED HAMMERS, MASSEY'S STEAM HAMMERS, SOHLENKER'S BOLT CUTTERS,

and Salivation. Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

ENCINES SUG

AACHT ENGINES.

MILL SUPPLIES AND LUBRICATING

FROM 2 TO 100 H. P., ALWAYS IN STOCK

CENTRIFUGAL ROLLER

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of smalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh.

All wearing parts easily and cheaply replaced. May be seen in operation at the New York Metallurgies Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.

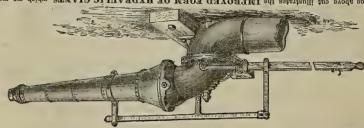
Certification.

Certification required, furnished on application.

THE FRISBEE-LUCOP MILL CO.

HOOKER & LAWRENCE, Gen'l Agents. Office, 145 Broadway, cor. Liberty St., NEM LOEK

GIANTS. HYDRAULIC IMPROVED 0E **FORM** 



The above cut illustrates the IMPROVED FORM OF HYDRAULIC GIANTS, which we may facture. All similar styles are intringements upon this form, and a judgement stands of record to that effect, until the decision of Judge Sawyer of the U.S. Givent Court in the matter of Hendy and Fisher vs. R. Hoskin et als.

10SHUA HENDY MACHINE WORKS,

SP RIORS furnished upon application to

18 to 51 Fremont St., San Francisco, Oal

29 to 51 Fremont St., San Francisco, Oal

IMPROVED

JIJUARULIC

MACHINE,

T DIFFERS FROM THE OLD STYLE IN HAVING ONLY ONE JOINT Instead of two. It is of greater capacity and more easily worked and kepps in repair. The estements of the indriving the capity to be utterly false. All litigation has been in reference to did style two cinteed mechanises made by him, he knows to be utterly false. All litigation has been in reference to old style to be uniteed mechanises, which are superseaded by our new style one jointeed. The decision of Judge Sawyer, referred to by him, he scarried up on appeals to U. S. Supreme Court, with absolute certainty of a reversal in our favor. Miners and including purchasers are horeby notified that we are the sole owners of the packens overing this style of Glank; we will prosecute to the fullest extend to the intervent of the control of the packens overing this style of Quantum way with the packens over the control of the packens over the control of the packens of the manufacturers of up in intringement.

Send for Circulars and Price List.

**LOB WINES** FUCINES JOHN TAYLOR & CO., Sole Agents,

HOISTING

1, 2, or 4 Drums, with Reversible Link Motion or Pat. Improved Friction.

LIDGERWOOD M'F'G COMPANY,

96 Liberty St., New York.

PARKE, LACY & CO. PACIFIC COAST AGENTS,

OIF2"

H. W. JOHNS' ASBESTOS PACK-

NEW YORK BELTING AND PACK-

Korting intectors and elec-

NATHAN AND DREYFUS OILERS.

TANITE CO.'S EMERY.
AND MACHINERY.

SICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY.

SOUTAL ENGINES.

UDEON ENGINE COVERNORS.

OLLO SILENT GAS ENGINES,

DISSTON'S CIRCULAR SAWS,

SAN FRANCISCO.

## Metallurgy and Ores.

## SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, **COLD AND SILVER REFINERY** 

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE,
LEAD PIPE,
SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

Under Chamberlin Patent.

## JOHN TAYLOR & CO.

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GIVESMYEE VAD CHEMICYIE' DEAG CHEMICYI VEEKYLAS VAD CHEMICYIE' DEAG

114-118 Fine Street, - San Francisco, We would call the attention of Assayers, Obemists, Winney Companies, Frogetors, set, Milling Companies, Frogetors, set, been tell stock of Belances, Furnaces, Muffles, Crucibles, Covidiers, etc., including, also, a full stock of Chanceles.

ppleachors of the policy and pulse, showing the value por AF Out Gold and Silver Tables, showing the word value below to the computation of assays in grains and grammer. The computation of assays in grains and grammer bids store free upon application. Agents for the Peters in December of the world-known manufacturer are thoroughly since of this woll-known in since the since of the woll-known in the since of the woll-known in the since of th

Nevada Metallurgical Works.

NO. 28 STEVENBON STREET,

Near First and Market Streets, S. F.

Orea worked by any Process,

Assaying in all its Branches, Maters, etc. Analyses of Ores, Minerals, Waters, etc.

Worlding Tests (practical) Made.
Plans and Specifications furnished for the most suffable Process for Working Ores.
Special attention paid to Examinations o Mines: Plans and Pacouta furnished

Mines; Plane and Reports furnished, C. A. LUCKHARDT & CO., (Formerly Hubn & Luckbardt,)

Mining Engineers and Metallurgists.

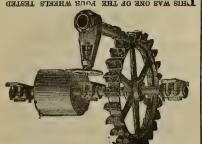
METALLURGICAL

Corner of Leldesdorff Street, - . SAN FRANCISCO 318 Pine St. (Basement.,

Asseylug and Analysis of Ores, Minerals and Waters. Mires Examined and Reported on. Presettes Instruction given Treating Ores by im oved processes.

G. KUSTEL & OO.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED
A yes 60 2 per cent, dissencing all competitions. Bend for
Microlars and guaranteed estimates.
Acceptage and guaranteed estimates.
Acceptage to FFLTOM, Mevada City, Cal.
Acceptage to FFLTOM, 21 and 28 Fremont Street
San Francisco, Cal.

INVENTORS, TAKE NOTICE!

258 Market St., N. E. cor. Front (up stairs), San Francisco. Experimental machinery and all kinds of metal, tin L. PETERSON, MODEL MAKER,

> QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE TA

1165 and TROMMELS CORNISH ROLLS,

FRASER & CHALMERS

ENCINEZ AND BOICEBZ'

ing smelting works This Mill as a Crusher and Pul-verixer is without rival. Is in operation in lead-

SHEED FOR CATALOGUE AND TRETIMONIALS

'SAMNA

M A CHINERY,

CORNISH

ENCINEZ

PUMPING

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

HOISTING

ENCINEZ'

HYTTIDIES

or 110 Liberty St., Mew York.

MIKE ROPE

TRAMWAYS,

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

MEXIOO OFFICE: No. 11 Oalle de Juarez, Ohlhuahua, Mexico.

SLETTEL'S

1AMES LEFFEL & CO.,

NEW YORK OFFICE:
ROOM 48, No. 2 Wall Street. GENERAL OFFICE AND WORES:

Pulcon and Union Streets, Obicego, III.

UTAH OFFICE-SALT LAKE OITY, UTAH.



PARKE & LACY, General Agents, San Francisco, Cal. FRASER & CHALMERS, General Agents, Ohicago, III., and Denver, Col

## COLD MINERS

Quartz, Gravel and Placer Mines!

**SMALGAMATING** PLATES Silver-Plated

HYAE BEOAED THE MOST ECONOMICAL AND SUCCESSFUL

Over 3000 Orders Filled. Fifteen Medals Awarded.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Old Mining Plates Bought, Replated, or Gold Separated.

San Francisco Gold, Silver & Nickel Plating Works,

668 and 655 MISSION ST., SAN FRANCISCO, CAL.
E. Q. DEUNISTON, Proprietor.

THOMAS PRICE'S ASSAY OFFICE MINERALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

iustriai Publiehere, Booksellere, Importere, HENEL CYREY BAIRD & CO.,

Molding, Founding, Parteen-Making and Matal Working, which will be sent tree upon application.

Set Our Caralogue of Practical and Scientific Books, 36 pages, 8vo., and our other Cakalogues and circulars, the whole covering every branch of Science applied to the part of the world who will furnish his address.

Part of the world who will furnish his address.

ASSAYERS, CHEMISTS, ETC.

810 Walnut St., Philadelphia, Pa., U. S. A.

and adapted by means of a sorew and connecting daytees to be turned on their centers in opposite directions so that the corresponding angles may be made upon each. These subject to provided at their four corrers with a sour corners with a subject sor a square. Though all the outs necessary for any work might be made with a single table, it is much more advantageous to have the two tables so as to set each by the same movement to its proper position instead of having to burn one of them back.

### To Inventors.

style and at low rates. CUBERY & CO., Printers, 415 Market street, below First, San Francisco, Cal. do every class of printing in good pared to make wood cuts, and to cation office, at 415 Market street, Delow First street. They are prean office nearly opposite our publipublic by printing circulars, cards, etc. Cubery & Co., Printers, have bring them to the attention of the from your inventions you must In order to derive any benefit

Our Agente.

Out PRINKUS can do much in aid of our paper and the adaes of procicels knowledge and science, by seateting Agente and shores of convessing, by lending their induces and ancouraging lavors. We intend to send none always of convessing, by lending their inducence and ancouraging lavors. We include to send none ut workly men.

Alwas Of Hone—California.

Gay, Inducta—Artiona.

Gay, Inducta—Artiona.

J. L. Dovie—Monterov Co.

R. J. Dovie—Monterov Co.

R. J. Horston—Butte, Monterov.

R. G. Husrow—Butte, Monterov.

E. Bauter—Tending of the Co.

E. Bauter—Tending of the Co.

E. Bauter—Humbold the Co.

E. Bauter—Humbold the Co.

E. Bauter—Humbold the Co.

E. Bauter—Tending of the Co.

E. Bauter—Tending of the Co.

E. Bauter—Tending of the Co.

E. Bauter — Butte, Monterov.

B. A. Henre — Butte, Monterov.

B. A. Henre — Butte, Monterov.

B. A. Better — Butte.

B. A. McHarke — Butte.

B. A. McHarke — Butte.

B. A. McHarke — Butte.

B. B. A. McHarke — Butte.

B. B. A. McHarke — Butte.

B. B. B. McHarke — Butte.

B. B. B. Battara Co.

## Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subscription, and give it their own patronage, and, as far as preceivable, aid in circulating the journal, and making its value more widely thrown to orbites, and extending its influence in rate, \$3 a year. Extra copies mailed for 10 cense it faithfully serves. Subscription rate, if ordered soon enough, if already a subscriber, please show the paper to others.

## FOR SALE CHEAP. MACHINE SHOP AND FOUNDRY

Gridley, Oal. HSIGNATS .8 Everything in complete running order; situated in the treet saltond be good of the country and the direct saltond be good of the great saltond the country salton or the country

## San Francisco Cordage Factory.

Established 1856.

Constantly on hand a full assortment of Manlla Rope, alsa Rope, Tarred Manlla Rope, Hay Hope, Tarred Manlla Rope, Hay Boy, Tarred Manlla Rope, Tarres slees and lengths under to order on about notice.

TUBBS & OO.

TUBBS & OO.

113 and 613 Front St., San Francisco.

## For Sale at Half Price,

ORE CONCENTRATOR

Address J. H. TIBBITS, Astoria, Long Island. N. Y.,

## THE RUSSELL PROCESS COMPY

NEM LOEK OLLICE, 18 BROADWAY C. A. STETEFELDT, President.

It you want a good pair of Gloves, ask your merchant for

Plotting pair of Glo your merch our brand.

**ГЕРК GLOVE MANUFACTURING CO.,** 

## Inventors, List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Ploneer Patent Solicitors for Pacific States.

FOR WEEK ENDING AUGUST. 8, 1887. From the official report of U. S. Patents in Diwer & Co.'s Patent Office Library, 200 Market St., S. F.

100 γους γενικό της τους από 367,497.—WHIP DUCKEY, But Grum, The Dalles, 367,704.—MITER-BOX—Albert Crum, The Dalles, H. 367,497.—Whip Socket, etc.—C. L. Bard, San 367,497.—Whip Socket, etc.—C. L. Bard, San

Work.—Opples of U. S. and Foreign Rebents chrushood to by meal by washing by the possible (by meal by telegraphic order). Amorioen and Foreign patents to telegraphic order). Amorioen and Foreign patents obtained for Feeling Design particle for the constitution of the patents for the patents of the patents

### Notices of Recent Patents,

morthy of special mention: Dewey & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are Agnordt benistdo yltneser staetsq edt gaomA

AUTOMATIC GAS-PRESSURE REGULATOR.

James W. Haggerty, S. F., Oal., assignor to Johas, C. Morris of agme place. No. 367,618.

Dated Aug. S., 1887. This device is especially applicable to liquide such as been, in which it applicable to retain a certain amount of carry bonic acid gas, and to maintain a regular pressure bonic acid gas, and to maintain a regular pressure on exident pressure is being gradually diminished by being drawn off. The device consists of a chamber into which the pass is delivered under high pressure it changes a peculiar valve, and a mechanism reduced before it enteres the cask or receptacle, which the chamber by which this pressure is modey which this pressure is reduced before it enteres and a work of the person of the place of the pressure in the cask reaches a certain point and pressure in the cask reaches a certain point and pressure in the cask reaches a certain point and smooth of the pressure in the cask reaches a certain point and smooth of the pressure in the cask reaches a certain point and street search in Nev. No. 367,580. Dated Ang. S. 1887.

This inventor belongs to that class of devices a part of the sars whether or lease of devices at the perior and a present or inventor and a pressure is the pressure in the cast of the sars are to a part of the sars and the pressure in the cast of the sars and the pressure in the cast of the sars are present of the sars are present of the sars are present and a present or and a present of the sars are present and a present of the sars are a part of the sars are a present of the sar AUTOMATIC GAS-PRESSURE REGULATOR,-

Been Water Heathou Attachment for Dollers, Joseph H. Mathews, Berkeley, Cal. No. 367,647. Dated Aug. 2, 1887. This attachment, which is of the most simple character, consists of a pipe connected with the water feed and extending which is the conduction character feed and extending within the water space back. As a point near the combustion chamber at the tea spoint near the combustion chamber at the tea point near the combustion chamber at the tea point near the combustion chamber at the tea point near the combustion chamber at the space between the tube-boxes, and thence the space between the tube-boxes, and thence and tare below the level of the water in the boiler. The evident object in conducting the pipe in this course is to carry it in close in the boiler. The evident object in conducting the pipe in this course is the carry it in close to the conference of the furnace, and, by reason of this location, the feed-water is thoroughly bested and the water-bottom of the boiler will be at as high a temperature as that in the top, therefore a suid the water-bottom of the conference as high a temperature as that in the top, therefore a suid the water-bottom of the conference as high a temperature as that in the top, therefore a suid the water-bottom and contracted and the water-bottom and contracted the conference and the conference and the conference and the contracted and the water-bottom and contracted the conference of the con FEED WATER HEATING ATTACHMENT FOR

MITER BOX,—Albert Orum, Dalles, Or. Mo.

MITER BOX,—Albert Orum, Dalles, Or. Mo.

MITER BOX,—Albert Orum, Dalles, Or. Mo.

More there are what is known as diamond of the ship and they are either of a rhombic or the ship and they are either of a rhombic or the ship and they are either of a rhombic or the papel, the augles at the corners of the ship and they are either of a rhombic or the papel, the sugles at the corners of the ship and they are either of a rhombic or the papel and short out an element of the ship and they are didings for and papel and short out. Though this is the particle of a rhompies miter-box, it is also adapted for all possible uses. The miter-box, it is also adapted for all possible uses. The miter-box of the miter-box, it is also adapted for all possible uses. The miter-box of the miter-box of the ship and they are four cuts necessary, namely.

BUSINES ARE ALL STATE STATE STATE STATE STATE AND ADDITIONAL ADDIT

## MINING SHAREHOLDERS' DIRECTORY,

COMPILED KYRRY THURSDAY PROM ADVERTISHENDYS IN MINING AND SCIENTIFIC PRESS AND OTHER S. F. JODENALS.

MAME OF COMPANY, LOCATION, SECRETARY, OPFICE IN S. M. MAKE OF COMPANY, LOCATION, SECRETARY, OPPICE IN S. M. CO. WARRAM, A. CO. California, T. Wekele, SEZ Montegomery St. Optiber Blue Gravel M. Co. California, T. Wekele, SEZ Montegomery St. Symbol Com M. Co. California, T. Mercal California, C. California, J. California, C. California, J. California, C. California, LATEST DIVIDENDS-WITHIN THREE MONTHS. ANTERNATION OF DISTRIBUTION OF THE STATEMENT OF THE STATE 

## S. F. Stock Exchange. Table of Lowest and Highest Sales in

ı			-	_						
ı								****		
ı	23	3.25 1.25 5.25	\$c	3,10 1,75 1,75	82	1.75 4.80	BS.	00.7	Kellow Jacket	
ı	Oc. T	CG, 1	00.4	CIT	02.8 88.8 08.8	67. 67.1	02.2	60.2		4
ı	09.8 09.1	30 T	20 r	OT'O	00'0	24 1	07'E	01.0	TOTALO TOTALO	14
ı	09 8	26 8	27 E	3 10	36.6	3 30	UL P	37 5		
ŧ					36		DE.	06	otoning a	3
۱	08.	07.	08'	04	38.	27.	06"	28.	doignos	40
ľ		****		6.00					Silver King	
ı	GP.	0¥.	g₽*	UE, I	ne"	97"	09°	ud.	Silver Hill	
	00.2	07 7 07 7	00'E	CZ. F	21.2	00.5 00.2 00.5 00.5	02.0	07. E	SIGILS INGVECTS	
	4.50	UPP	00'0	30 V	24.5	00 7	96 3	07.0	Deg. Deferrer	
ı		-	09 6	19 35	ע וון	UU G	46 P	04 8	andologi woo	
ı	24.	#G	00°Z	00.9	72	09.5	06.7	37.8	Savave	
									Tata Taylia	-
	OI.				er.	0T.	gr.	OE.	P. Sheridan	
	ci.				06°	01.	0Z.T	CO.	Peer	ш
ı	00'T	2017	05° Y	00.1	no'T	CO'T	U4.4	OT'T	Ferriess	
	05.1 87.	1.85 6.06 1.80	OLL P	00' I 98' I 98' I 98' I	06.7 08.7 08.7	1.05 1.05 1.05 1.05 1.05	00.0	00.1	LOCOSI	
	96 5	811 9	36 3	90'7	77 7	20 J	00.0	00 4	OASEMISMETTER	
i	96 L	38.1	01.2	48 II	2,25	99 T	06 6	UP 6	Operation	1 5
	00.6	87	8,25	09.7	98	09.7	¥6	03.8	TidaO	
	3,00	****	3,80	03.2	3,00		3.15	06.2	Occidental	
	11.7					99"	39. 31.8	09"	North G. & C	٠.
	67.6	8g	29	0019	ne e	5.00	5.75	UP. P	Nev. Queen	
	20.2	17			77.7	77.7	77 7	Y	MISSELS	
	OILO	0010	<del>2</del> 6	01:0	O'E		308	Sec 1	MOLEU DONG TRIES	
	27 p	09'9	20	26 6	A E	OF 'T	EUL.	10	TARABIO TO TOTAL	
	87.9		OF I	92.9	14 [	1.40	0₽.I	29 T	O'OYOM	
									Morthern Belle	
	****		92,₽				3,75		Mt. Diablo	
	06. ₽	4:30	ng'₽	1.80	9.00	€£,4	2 S2	06'T	dould & Churry Hable	
	06°T	**	2.00	08.1	39'%	00.2	07.2	09.2	Μ,οποοπο.Μ	6
	1.00	01.	Y		11.0				MARTEIN WILLIAM.	81
	00 1	89. 84.	01*	011	08°	01.	06°	co.	TIRCH AL RENT	
i	37.	#9	24	0Y.	00.E	02	00' <del>%</del>	20.00	deolf about	
í	3 00		3,00		3,00		UU 7	00 8	Acceptant of the second	
Į	00.8	31.1	T.30	99"1	GΣ.	09.	88. 87. I	1 20	Anitant.	
ı	99"	09"	475	99*	08*	03.	č8.	94.		
ı	06	87. I 80. I 80. I	0Z'I	00. i	1,30	00.1	U. 40	62, I	awoI	
ı	08.	****	09*						[rrqebenqence·····	
ı		01°7	00.2		2,00	****	00°3		Holmes	
ŀ	6,75	OT TE	C1.E	4.75 4.75	25	4.65 4.65	00.0	07'0	THE OF TANKONDESS.	
ı	20.2	UL F	80	08 1	64	1 30	70°0	50 31	Holorogona	ш
ı	62.6	00 5	. 63	44.7	8g	99 7	40.4	08 1	Conja & Cintra	
١									axird brown	
١	69,1 60,7	67.8 32.1	3E. I	1.25	1.50	či,i	08.I	33.I	Exchequer	
	00°2	67,8					6,75	62.25	пор вядиля	
١				08. 08.	GJ.I	****		****	East B. & B	
ı		****			02.		07*		Dudley	1
ŀ	gg*	09.	09*		01.		08,1 87,	CO.°	Oentral	1
	00.1	00.8 06.	00 T	001	02'7	88. 7.25	00'T	07.1	Crocker	ĺ
	Of T	00.0	FOT	00	Tr.	30 1	₹9 <b>τ</b>	UL E	OTOMA T OTHER	1
۰	for	00.8	TUL	26 8	CPL	36 4	481	81	taiog amost	-
	07	gT.	02.	08.2 08.2 08.2	08		90	96	Gon Pacific.	1
			ç9'	čč.	07,	09.	06"	27.	Caledonia	!
	6.50 6.50 6.50	5,25 7,00 2,25	3.00	08.2	2.75	6.25 7.25 8.50	3.25	3,10	Con, Imperial	1 '
	62.7	00° /	09.7	****	97.8	62.7	OT	00.8	Сопидерсе	1.
	00.0	CZ 'C	<del>§</del> 9	OG.C	00.1	97.9	00.6	00.1	Choilar	1
				****			11.1	17	noidnishU	1 8
			06.2	0¥°8		GP.S	er.e	01'7	Опяпецке 2	1 -
	Kar	181	OS O	TIT		TI ET	Fra G	170	TOO WE'N A STOOM	
	#6T		₹6T	¥4I	213	FAT.	003	116	Left A off gold	5
	1.15	98"	06		96"	06	i is	00 L	Ruling	1
	1								Bodie Tunnel.	١,
	1.20 2.00 2.00 2.00	06.I	96'I	01.1 01.1 05.1	0F°3	58,I	2,60	04.2	Benton	1
	00.7	****	2,20		09"%	00'2	08.2	99 7	Bodie Con	
	1.20	T'TP	07°T	01.1	98°T	OX. I	SE. L	GT'T	Belle Isle,	1.
	1.30	07.7	UF T	UT. I	CZ. T	UT. T	UP.L	CZ. I	Estrimore	E
	00.2	08.1	1,20 1,40 1,20 1,20 2,20 1,95	66.1	60.2	01.1 01.1 01.1 02.00 28.1	CC.Z	06.5	······ Toluna	2
		89	80			Ho	CZ. C	00 0	THESE OF TREICHER	1
	32.7	67	89	20.3	7.50	19	62.8	16 4	Todolog w took	1 "
	0₺"	č£,			0		÷		Brophy	1
	27.75	6,25	00.8 00.8	62.25	\$6	06.8	123	00 6	Belcher	1 2
	.30		nb'		0ħ,		0ħ*		Argenta	1
	GF T	1.35	I*32	32,I	1,50	32,I	ZY.I	06,1	Andes	1 3
	037	01.3	62.2	01.2	01,2	2,10	67.2	GP, 8	Alta.	1
	32.₽		4.40	62.P	4.75	09.5	00.0	4.30	shqLA	
	40 1		· ·	20 1		02 0	-		Alpha, Argents, Bellow, Argents, Bellow, Bello	1
	1									I -
			1 0				-	Au a	( I M LOW THY O O	
	177	Sn w	. T							
	II.	3n∀	7 °5		.88	1012	164	Z[rr]	COMPANY.	£
	DNI	END WE	SEE SEE	ENT	TMG HE	ENL	ONI	EAD Tale	NAME OF	0, 0

## Sales at San Francisco Stock Exchange.

gg	Yellow Jacket	OGT	Gould & Curry	310
89.I	Utah	09¥	Exchequer I.50@1.55	180
	Union Con	330		20
		002	Oaledonia600	TOG
997	Scorpion	200	Oon. Pacific 20c	200
	Silver Hill	300		074
U. 4, 4U	Sierra Mevada	330	Con Va & Cal 173@184	99Z
	Savage		Oholiar	
61-1	Peerless,,,,	100	Belle Isle Bell sleaf	99
	Potosi		100.230ag, I sibodi	OčE
	Overman,		Baltimore910mitled	200
£8@£8	ridqO	450		920
ŧ6*****	N. Belle Is	90		120
06.4,	Мет. Qиеец	USP		98
	OLBVBN		Aclantic45c	00I
	Мехісап		Argenta30c	OOL
	Justice		de.k	20
			cs.IAndes	ogt
997	1,RWOL	TOO	al. 2	120
89 (92 °	Hale & Nor	01/9	HURSDAY Aug. 11, 1887.	址

## New Incorporation.

The following company has been incorporated, and papers filed in the office of the Superior Court Department 10, San Trancisco:

KINGMAN SILVER-MINING COMPANY, Gapital stock, \$10,000,000. Directors, Henry Raymond, Charles Crandall, C. R. Lewis, J. C. Bollinger and H. P. King.

## Bullion Shipments.

We quote shipments since our last, and shall be pleased to receive further reports:

Standard., Aug. 7, \$9000; Dimmick, 6, \$3200; Hantuer, 4, \$88,802; Germanis, 4, \$6089; Wells, Fargo & Co., 5, 51 20; McCornick & Co., 5, 2 26, 400; Wells, Fargo & Co., 6, \$11,500.

## Mining Sbare Market.

The generally favorable reports from the mines during the week, whitout estating any special excited during the week, whitout estating any special excited during the week, whitout estating any special excited market. It is the case, too, that the shares of some market. It is the case, too, that the shares of some market. It is the case, too, that the shares of some mand at being a being representation of the Comstock companies have been in large developed they have since more than maintained. Hale and diverses, Savage, and Con. Cal. and diving having mand sculve, he mines and diving some improvements and diving a some improvements able advise from the mines, once improvements as well as in certain outside properties.

The centlement of the various issues that have, in this class of stocks. For a long time the difficulties excitently between the Surford Comstock, in this class of stocks. For a long time the difficulties are stilling mining event of the various issues that dealers in this class of stocks. For a long time the difficulties are in the Surfor Tunnel Co. and the least of these, the claim of the Surfor Tunnel Co. and the companies was a disturbing element. The last of these, the claim of the surfor Tunnel Co. and the caviting mining even the Surfor Tunnel Co. and the caviting mining companies was a disturbing element. The last of these, the claim of the surfor Tunnel Co. and the developments are now under the management of the companies of the companies of the companies of the developments are now under the management of surformers are now under the management of the developments are now under the management of surformers are now under the management of the developments are now under the management of the development are now under the management of the development and the development.

| San Ftangisco Metal Matket. | Amoisco Metal Matket. | Amoisco Metal Matket. | Amoisco Metal Matket. | Amoisco Metal Me

Plow.....
Machinery...
Maylor & Co Tinterte—O

## New York Metal Market.

954@96c per oz. Telegraphic advices dated Aug. 11th give the following New York prices:

Qurestives—5808-6.6

Onte following is the latest by mail from the "New Total Brond and the latest by the latest b

Prices generally ruthing for metals not regularly death.

Prices generally ruthing for metals not regularly death in on call at the M. Y. Exchange, oversing extremes of the W. Y. Exchange, oversing extrement of the W. Y. Exchange, oversing extrement of the W. Y. Exchange of the W. S. C. Copper, \$4.60.00 or Estimote Copper, \$2.60.00 o

### Don't Fail to Write.

Should this paper he received by eny subscriber who does not want it, or yound the time to suitable to post of the conditions of the condi

PARTIES desiring the prevention and removal of steam-boiler incrustations will find it to their advantage to address Mesers. Hinckley, Spiers & Hayes, this oity, agents for the "Liewellyn" Peed-Water Purifier and Heater,



## ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

For Mines, Hoisting Works, Mills, Reduction Works, ors, Dynamos, Tramcars, Elevators, Signals and all kinds of Electrical Systems for lightlag power, sither direct or with storage Batteries,

EDIZON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE 51., SAN FRANCISCO.

## CALIFORNIA VIGORIT POWDER CO.,

No. 40 California Street, San Francisco,

Blasting Powders.

EOH HEMOAING SLIMES Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal.

ED. G. LUKENS, Manager.

## GIVAL BOWDER COMPANY

The Safest and Strongest High Explosives in the Market.

### Of Different Strengths as Required. CIVIL POWDER OF DYNAMITE

10DOON BOMDEE INBEOMED GETVALINE-DANVWILE' SELONGOL EPBU DAUBURGO BUQ OLOU ESVOL IN HU NOBET'S EXALOSIAE GETVALINE',, apich contesius 84 bel ceut of Niklo-

## FOR HAILKOADS AND LAND CLEARING. Is from three to four times stronger than ordinary Blast-ing Powder, and is used by all the Kailroads and Grawel Claims, as it breaks more ground, pulverizes better and saves time and money. It is as dry as the ordinary Blasting Powder and runs as freely.

Bandmann, Nielsen & Co.

Crush 8 to 10 Tons per Day.

GENERAL AGENTS, SAN FRANCISCO,

Torts old straight a TOUR.

WEIGHT, 4 TOUS.

It is a full fledged Quartz Mill without gearinge, coge or pulleys.

Power applied direct. Works Ore at Low Cost More and Cost or pulleys as desired, works of the country of the control of the control

now cost of working.

W. GUTENBERGER.
SECREMENTO FOUN GIV. IN SEG Front Sts.
SACREMENTO, CAL.
Any infingement on this mill will be presented to the full extent of the low.

WINING

ELEVN ENGINES'

GENERAL MACHINE WORK, ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc.

DEMEA & CO., {No. 260 MARKET ST. } PATENT AGENTS. SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco.

THE ROLLER ORE FEEDER

mly, under one or all the stamps in a battery

Golden State and Miners' Iron Works.

Sole Menuiscrurers,

## MINCHEZLER HONZE

44 Third Street, San Francisco, Cal

Laundry Free for the use of Families

HOT AND COLD BATHS FREE. & \$1.t

Terms, Board and Room, \$1.00 per Day

GOMS WITH OR WITHOUT BOARD.

## 102HNA HENDY MACHINE WORKS

1.25 Free

American Exchange Hotel

Slectric Reliways, and Apparatus for the Electric Transmission of Power, Storago Batteries MOTORS, LAMPS

Keith's Electric Dynamos

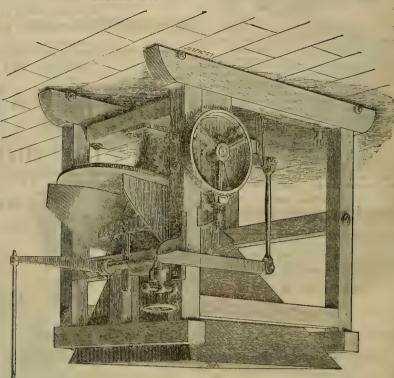
N'S' KELLH

317 Sansome St., San Francisco, Cal ELECTRIC IMPROVEMENT CO.,

ONLY PERFECT SELF-RECULATING SYS-Electric Lightlag.

Office, 40 Neveds Block, Skevenson St. San Francisco, Cal.

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



"OHALLENGE," IMPROVED ORE FEEDER.

The est form of Feeder ever devised, and pronounced by reputable mining men to be far superior to any form of "Roller" Feeder manufactured. We refer to the following gentlemen who have furnianed us with teatmonial letters to the above effect, which can be seen at our office, viz.:

N. W. CROOKER, Supt. Bunker Hill Gold Min.

J. R. Tereurok, Taylor Mine, Greenwood, Cal.

W. G. Roberts, Greenwood, El Dorado Co., Cal.

J. R. Tereurok, Supt. South Spring Gold Min.

M. G. Roberts, Greenwood, El Dorado Co., Cal.

And many others, and we are prepared to furnish either the

"CHALLENGE," "STANFORD," "TULLOCK," or "ROLLER" FEEDERS,

And will furnish descriptive Catalogues and copies of Testimonial Letters, and will quote prices upon application.

## Iron and Machine Works.

CALIFORNIA MACHINE WORKS, WO. 119 Beale St., T. San Francisco Mochinists, T. San Francisco Mochine Works, T. San Francisco Mochines of Moc

Steam Engines, Flour Mill, Mining, Saw Mill and Dredging Machines Brodle Rock Crushers

Manufacturers of B. E. Henricken's Petert Automatic for Catches for Elevators. All kinds of machinery add and repaired. Brodle Rook Orushers, Prodesing Machines Steam Power, Hydraulic, Side Walk and Hand-Power ELEVATORS.

**UNION IBON WORKS**,

ROOT, NEILSON & OO. SACRAMENTO, CAL.

Engines, Boilers, Steam

VAD VIP HIADS OF

Front St., bet. N & O Sts., Sacramento, Cal. ring Mills, Savy Mills and Quartz Mills Machinery constructed, fitted up and repaired. MACHINERY FOR MINING PURPOSES.

Golden State & Miners Iron Works.

Marufacture from Castings and Machinery of all Kinds at Greatly Reduced Rates.

STEVEUSON'S PATENT

Mold-Board AMALGAMATORS,

Golden State Pressure Blowers.

First St., between Howard & Folsom, Sta

THOMPSON BROTHERS,

EUREKA FOUNDRY

UPACTURERS OF CASTINGS OF EVERY DESCRIPTION tawoH bas noissiM meeween Mission and Howar

MANUFES OF GENERAL MACHINERY.
Works, Wo. 315 Mission St., San Francisco.
Special attention given to Woodworking Machinery.
Steam and Gas Engines. Correspondence solicited.

MINING FUCINEERS

Civil and Mining Engineer, W. A. GOODYEAR,

MINING EXPERT AND GROLOGIST.

ROSS E BROWNE,

Mining and Hydraulic Engineer,

NO. 307 SANSOME ST., SAN FRANCISCO.

The Techno-Chemical Receipt Book

THE TECHNO-CHRIGAL EXCEPTY BOOK—Conread and a control of the con

ndustrial Publishers, Booksellers, and Importers, Importers, T. S. A. Walnut St., Philadelphia, Ps., U. S. A. HENRY CAREY BAIRD & CO.,



Back Firss of the Minine and Sorswiffer Passe (un-sar (two volumes) \$6. Inserted in Dewey's patent bind-sar (two volumes) \$6. Inserted in Dewey's patent bind-Zinc, Copper or Brass Screens for all purposes. Call-ornia Perforating Screen Co., 145 & 147 Beale St., S. F.

## NEWHALL

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents.

Have correspondents in all the chief cities of the United States, Europe, Australia, India, Obina and the principal latents of the Profile. Furness goods and esil children promise produces in those countries.

General Agents for the Pecific Cosst of NATIONAL ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of London; BOYLSTON INSURANCE CO., of London; BOYLSTON INSURANCE CO., of London;

GRO. W. Prescort, President. Івуіне М. Scort, Gen'l Manager.

Location of Works, Potrero. P. O. Box 2128.

Office, 216 Market St., S. F.

Agents of the Cameron Steam Pump. STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

Pans, Settlers, STAMPS,

BABY HOISTS, VENTILELING FAUS, BOOK BREAKERS, POOK HOISTS, Vertioal Engines, Horizontal Engines, Automatio Cou-opy Engines, Automatio Cou-opy Engines, Automatio Cou-opy Engines,

NNION IBON MOBKE TRY OUR MAKE, CHEAPEST AND BEST IN USE.

Successors to PRESCOTT, SCOTT & CO.

SEND FOR LATE URGULARS

### MOBKS FULTON IBON

(ESTABLISHED IN 1865.) HINCKLEY, SPIERS & HAYES, Proprietors.

San Francisco.

-WANUFACTURERS OF-

MARIUE ENGINES AND BOILERS. Propeller Engines, either High Pressure or Compoun Stern or Side-whoel Engines.

Worke, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Weter Buckets, Pump Columns, Air Com pressors, Air Receivers, Air Pipes. MINING MACHINERY.—Hoisting Engines and

MILL, MACHINERY.—Batteries for Dry or Wet Crushing, Amalgamating Pans, Settl. 1s, Furnaces, Oncontrators, Ore Feeders, Rockers, Concentrators, Ore Feeders, Rockers, etc.

MISCELLANEOUS MACHINERY.-Flour

Mill Machinety, Saw Mill Engines and Boilers, Machinety, Powder Mill Machinety, Water Whee

**MORKS ORE WET OR DRY.** Tustin's Pulverizer

DEANE STEAM PUMP.

CO"

TUSTIN'S PULVERIZER.



Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

OF EVERET DESCRIPTION.

Boiler Repairs Promptly attended to and at very moderate rates.

Deane Steam Pump. AGENTS FOR THE PACIFIC COAST FOR THE

SPECIALTIES:

MILL PACIFIC ROLLING

Cast Steel Castings and Steel Forgings

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought to partice.

GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

CHINERY CASTINGS of Every Description.

HOMOGENEOUS STEEL, E SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

This paper is printed with Ink Manufac-tured by Charles Eneu Johnson & Co., 500 South 10th 3t, Philadelphia. Branch Offi-cess 47 Bose St, New York, and 40 La Salle St, Obicago. Agent for the Pacific Cosst-Joseph H. Dorety, 529 Commercial St, B, F, ALSO Steel Rods, from \$\frac{1}{2}\$ to \$\frac{1}{2}\$ tron \$\frac{1}{2}

rad Iliw erebro Ta

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

NOTICE 10

WINING WEN'

ENGINEERS, CONTRACTORS,

TUNNELING, SHAFT-SINKING, ETC. and others interested in

Engineers' Tables of Progress

WITH MAPS, ILLUSTRATIONS

AND FULL DESCRIPTION OF THE

NEM KOBK

AQUEDUGT TUNNE

Section 16x16 feet; Length 36 miles.

THIED EDITION NOW READY.

SENT FEEE ON APPLICATION

For Catalogues, Estimates, Etc. address:

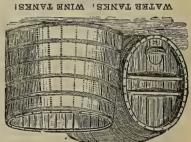
INCERSOLL ROCK DRILL CO.

REPRESENTED BY

PARKE & LACY

8 California St., and 21 Fremont St., SAN FRANCISCO, CAL.





CALIFORNIA WINE COOPERAGE CO.,

ALL KINDS OF CASKS, TANKS, Etc.

SET SHIP, MINING, 2nd WATER TANKS & Specialty. The

N. W. SPAULDING

Manuacturers of







For Sale by all drugglets.

H.H.H. HORSE LINIMENT.

or all kinds made to order. Send for Descriptive Cats orne. It and 19 Fremont St., San Francisco

CAW MILLS AND MACHINERY

SWES

CIRCULAR

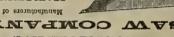
CHISEL BIT

CNA

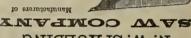








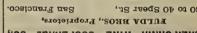




San Francisco.

SO to 40 Spear St.,

FULDA BROS., Proprietors,

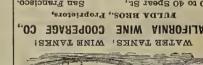




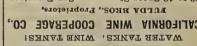




























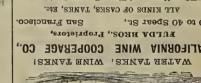












(\$275.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE MOW IN USE. Concentrations are clean from the first working. The wear and overely nominal. A machine can be seen in working order and ready to make bests at 220 Fremont

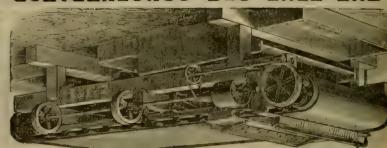
Dake Sizes :—Hearing touched three of your Frree Venners in a competitive trial with other similar machine (Triumiph), we have excited duraslives of the superiority of your Venners, as is evidenced by the fact of our machines for immediate dedivery. Yours truit,

THE MOUNTAIN COMPANY (Manitod),

W. H.—Since fine shows were written for 60 Venners bester proper active to the section of the properties of the species of the section of the se Тик Момтана Сомрант (Limited), London, October 8, 1885.

Protected by patents May 4, 1869; December 22, 1874; Soptember 2, 1879; April 27, 1830; March 22, 1881; Febru-ary 20, 1835; Soptember 18, 1865. Patents applied for. N. E.—Since the above was written the 20 Varuers having been started gave such satisfaction that 44 additional Frues and more stamps have been purchased,

ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OF VANNING MACHINE. CONCENTRATOR OBE THE FRUE

Room 7, No. 109 California Street,

(2220'00' FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the celebrated "Triumer" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their transe being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built as compactly as their reduced, and occupy less mill room when sets up.

An important improvement has recently been introduced into their construction, which consists of a Riterix Table; placed in front of and which the false for the discharge from the feed and amalgan bowl. The improvement is in the cieptor of the almost and the discharge from the feed and analgan bowl. The improvement is in the recently been introduced into their construction, which consists of a Riterix Table; placed in front of and which the by the longitudinal nucleon of the slakeling frame to which the stable is attached. We have at hand many testimonials, from well-known Superintendents of mines in different mining districts to the United States, bearing evidence of the efficiency and superiority of this form of Concentrator, and we shall be placed to send Circulars covering such letters of settimony, and, as well, directions for setting up and operating these machines, and are ready to quote special prices for any considerable order.

San Francisco, Cal. 10SHUA HENDY MACHINE WORKS,

Nos. 39 to 51 Fremont St.,

WM. H. TAYLOR, President. "TRIUMPH" ORE CONCENTRATOR.

OF HILL

HEINE SAFEIY

WATER TUBE

L. R. MEAD, Secretary. R. S. MOORE, Superintendent,

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

DURABILITY, SAFETY,

ECONOWA'

AND FACILITY OF INSPECTION and REPAIRS.

Bollers can de seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hucter Bres. & Co., Californa Jute Mills, and other places. . өзл пі wоп тэмоТ өзтоН 000,00

Guaranteed More Efficient than any other Boiler made.

OUARTZ MILLS-Gold and Silver, Copper and Lead Smelting Works, Rossting Furnaces of all kinds.

AIR COMPRESOURS—Rope Powor Transmission.

WINDLAULIC PUMITIC FULL WISTER FIFE Speciality. Work.—Have just completed order for 35 miles of 44-inch pape of 4-inch for 10 to 8ping Yallow Waster Works Company, San Francisco.

STEAM ENGINES.—Corlise, Since-Ways Company, San Francisco.

STEAM ENGINES.—Corlise, Since-Ways, Popped Valve Automatic, Single, and Compound.

STEAM ENGINES.—Corlise, Sinde-Ways, Opped Valve Automatic, Single, and Compound.

60,000 borso power now in use. REFRIGERATING MACHINERY for Steamships, Browerles, and Cellars. BULLDERS OF

MOTICE.—All our plates are graranteed to bave the full weight of silver agreed upon, and are fested before leaving our works, thereby avoiding the complaints about light weight, made so often before we started

JUSTINIAN CAIRE, Agent, in this branch of industry.

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

Agent for HOSKINS' BATTERY SCREEUS AND WIKE CLOTH

HADEO-CARBON ASSAY FURNACES

IN QUARTZ, GRAVEL, OR PLACER MINES. MIMC

MADE OF BEST SOFT LAKE SUPERIOR COPPER

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

FURNISHED ON APPLIOATION, GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

No. 108 FIRST STREET. NOVELTY AND PLATING WORKS, **FRANCISCO** NAS

MHEETS

IRON CASTINGS of all descriptions.

CT PULL

First Premium Awarded at Mechanics' Fair, 1884.

Tolore A MEES.

Sole Licensed Manufacturers of the

tens, Wyoming, Utsh and Arizons. Lightest, Best Balanced Pul sy in the World. Also I Medart Patent Wronght Rim Pulley

SHAFTING,

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

STEICER & KERR, AS, W. KERR

MEDAL AWARDED, MECHANICS' FAIR.

HAU

MACHETH PATER STEEL-RIM PULLEXS—Fifty per cent lighter and 25 per cent cheaper than cast from pulleys; will not break in transportation.

BOILER.

CHAS, E. STEIGEE,

AND RAILROAD CASTINGS.

CHILLEU

DEWEY & CO., (No. 260 MARKET ST.) PATEUT ACENTS.

Nos. 129 & 121 Fremont Street,

Ban "Brancisco, Cal IG, HANGERS AND APPURTENANCES

PORTLAND, OREGON,

SALT LAKE CITY, UTAH.



Machinery

Hangera,

Machinery, Steam Pumps, M00d

ENGINES and BOILERS.

## HIVE MOBKS JUBH AUHSC

Nos. 39 to 51 Fremont Street,

ENGINES SUG MACHINERY NEW and Dealers in SECOND-HAND BOILERS,

Stationary, Portable, and Hoisting

**ENCINE2 Sud BOILERS**.

Shafting,

goxes, Pulleys, [Manufactured by the Cummer Engine Co., of Cleveland, Ohio.] SPECIAL AUTOMATIC ENGINES.

BELLING

LUBRICATING COMPOUNDS and OILS

LEATHER and RUBBER

BLOWERS AND EXHAUST FAUS.

MINING PUMPS.

OENTRIFUGAL PUMPS,

Steam Pumps of all Makes,

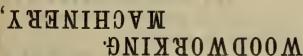
OF THE BEST MAKES.

PIPE and PIPE FITTINGS.

spoop Brass

**FILLINGS** 

Ore Feeders. Concentrators, Automatic draulic Giants, "Triumph" Ore Hydraulic Mining, Quartz, and Saw-Mill Ma-chinery, Hydraulic Gravel Elevators, Hy-



SHINGLE MILLS, Etc. PLANERS, SHAPERS,

Single and Double Circular Saw-Mills.



MINING MACHINERY

## BAND SAWS, STICKERS, ---COMPRISING

IMEROAED

"Cummer" Engines, from Cleveland, Ohlo,
Porter Manufacturing Co.'s Engines and Bollers.
"Boegs & Clarke" Centrifugal Fumps.
"The Volker & Felthousen Mi'g Co.'s

The Volker & Felthousen Mi'g Co.'s

Buffalo Duples Steam Fumps.

# **VELTON**

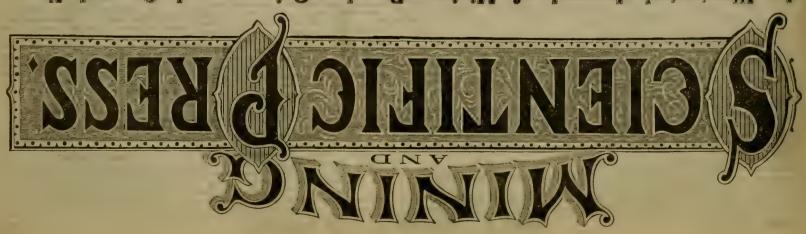
A NEW AND RADICAL DEPARTURE IN

STEAM GENERATOR.

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

FOR CIRCULARS.

San Francisco, Cal. PACIFIC IRON WORKS,



## Illustrated Journal of Mining, Popular Science and General News.

.Vогимет в.

SAN FRANCISCO, SATURDAY, AUGUST 20, 1887.

BA DEMEA & CO.

feet in thickness.

In sinking this shaft, seven different gold-bearshaft was finally abandoned and another was sunk at the bottom of the terrace on the flat, which is now down to a depth of about 400 feet. ground was formerly worked, that there was scarcely any water below 160 feet. The first levels, as it was found, when the deep then considered the wet ground, their object being, when the shaft was down sufficiently deep, to drive out into the flat and work the ground on the flat. After completing this tail-race, the company commenced sinking a shalt on the terrace, in order to avoid what was gold have hitherto been found, comprising an area of about 200 sores. In order to drain as

and erground tail-race, taking the tailings and bare suffices and resur-store and to the surface by elevators and tailing is full. The company is now working the whole flat on a face by hydraulic eluicing, allowing the muddy water to pass into the the door on this obute is worked by hydiaulic gear, which raises and shuts it when the truck out, which we take from the Government publication, "Hand-book of New Sealand Mines." The inclined tranvay runs under a cluste where the elevator's buckets empty, and the close of the courted by hadranise. The elevators and trammay are shown in the ings to a hight of 60 feet, and then by an in-olined tramway to a further hight of 120 feet. race and erected elevators for lifting the tailworkings for a time, turned its attention to the upper workings above the level of the tail-The company having abandoned the deep ing layers were gone through, but none of these proved profitable to open out on.

Formation of Goal from Mine Timber, that it might be authracite. Analysis, howThe following paper, descriptive of carbonized mines timber, was read by E. 3. Moffat beized mines timber, and the weight of the formation of working connerties where arreface, slate, only is the following paper of Mining Epper.

ď

CARBONIZED MINE TIMBER.

coal; E, much compressed and altered to coal-like substance; E, wedge. ly charred; C, soft charcoal; D, hard charwith exclusion of air for a period of over 30 years. In referring to the engraving here-with, A signifies well-preserved wood; B, partprop were: very heavy pressure from the super-incumbent mass of rock, and a smoldering heat, aidt 10 Jraq reqqu edt ni noitsrells eidt beoub random had orwar the group until the roots. At this places where gold is found which fail to give a feeted upon the did not get into the fired in the mine the fired in the into the fired in the mine the fired work may be into the fired a little and the conditions, then which the fired a little fired where gold in the man fired fired a little fired where for the fired where fired

worth \$34,000 several years ago are now down NEW YORK STOCK EXCHANGE seats that were

A STATE OF THE STA wedge which was on top of the prop. In this the fibrous structure was still quite apparent,

sembling mineral coal in appearance. The cobange was even more marked in the wooden

pression, it was changed into a material re-

the top, where it showed evidence of great com-

touch. It then shaded into hard charcoal, and at way up it was somewhat charred externally, above this, for some distance, it consisted of ex-tremely soft charcoal, which orumbled at the

wood, showing little evidence of heat. Half-

mine-prop which had become curiously altered.

The lower part of the prop was well-preserved

in some places, the miners came upon a wooden ther progress. In working through one of the piles of mine refuse, which filled the vein from floor to roof

Systematic measures were then taken to extinguish the fire by deluging it with water, and by working off any fur-

years ago, when it was thought best to open it again and examine its condition. It was found up to be still smoldering, and the fire burned up burlishly as soon as air was freely admitted. The still also the still and the stil

and smother the fire by the exclusion of sir. All the openings were walled up tightly, and the mine was left undisturbed until a couple of qu saim edt lass et bebiseb yllann saw ti bas left in the mine below. Ineffectual attempts were made at that time to extinguish the fire,

from an ore-rosating pile on the surface of the ground at this point, through an old shaft, down to the retuse and pillars which had been

Over 30 years ago fire was communicated

naual pillars being left to support the overlying rook and drift, which are here some 25 to 30

known as the Big vein. At a point just opposite the blast furnace, much of the coal from this vein was mined out many years since, the

water. It is some 10 feet in thickness, and is

for several bundred yards slong the banks of the brook, a few feet above the surface of the

arthracite coal in the rocky bank on the south side of Roaring brook, near the blast furnace. The vein is quite flat, and is exposed to view

tate who have visited the works of the Lack-awanna Iron and Coal Company, at Seranton, will remember the exposure of a large vein of

neers in February last: Members of the Insti The following paper, descriptive of carbon-ized mine timber, was read by E. S. Mosfat be-fore the American institute of Mining Engi-

THE ROSS MINING CO.S ELEVATOR FOR LIFTING TAILINGS.

quoted at \$4800, are now floating about at but the cross-fracture was sharp and conchoided to \$20,000, and Produce Exchange seats,

burned with a feeble flame, and it was thought | Diggings lately. its specific gravity was al. 38, and its its its serior threat to tadt as erres out search at the serior of the se Some rich quartz has been found at Henry like that of anthracite coal, the color jet black, and the luster very bright and

whole of the ground where the rich leads of I This company has bought out all the private claims on Ross flat, so that it now holds the now being worked by the Rose Co. there was much rich ground. The ground is awhile and the claims were abandoned, though

portions of the flat, good returns were obtained, but water effectually prevented the lower portions being worked. A company was formed to drain the flat, but they gave up after awnife and the claims were abandoned. Shough

terraces and flats adjacent. From the upper the creek, and was soon followed to the gullies,

diggings. Gold was first found in the bed of Ross has been since 1865 the center of various

Company's mines, Jones oxeek, west cosst (Middle island), New Zesland. The town of

(Concluded on pagas Little) per minute. When the trucks are at the top of the incline they run into kick-ups, and are

the elevators and trucks is about 19 cubic feel

ager, the greatest quantity of stuff lifted by

up. According to data supplied by the man-

enotevele est that shones and state of amount estat are vewment beniloni est no shourt bas

the fine tailings, and consequently the ground and new bashed more rapidly. The quantity of stuff washed in the paddock is limited to the

lo erom this of erotavele ent eldane esiwedil lliw when the paddord as tracked in the bottom when the paddord is sufficiently large. This remains the addord allow as investil lies.

tem can be obtained, as the large stones have now to be broken up and sent to the surface,

number of devices have been arranged to over-sluice-boxes to be placed in the bottom and come the difficulty. One of the engravings on room to stack the stones; therefore a long time of this space shows the system adopted at the Ross must elapse before the full benefit of this system.

The Concentration of the Solution

Lixiviation of Silver Ores.

A Description of the Russell Process.\*

[NUMBER 4.]

The Chemicals.

The chemicals used are sodium hyposulphide, or the commercial hyposulphide of sulphar, copper sulphate or bluestone, caustic soda, sulphar, sulphate or bluestone, caustic soda, sulphar, sulpharic soid and sodium carbonate or soda-sab.

copper antipates of othersoner, satisfic stocks, sure copper antipates of othersoner, satisfic stocks, sure sods-ash.

Sodium hyposulphite is packed in barrels, and dose not decompose in contact with the addose not decompose in contact with the sure contact with the sure contact in the property of the sure contact in the contact in th

regions of lead does not require purification of lead does not require purification.

Copper Salphate,—Price per pound, 44 cents in New York; 4 cents of the new York of the Salphate, or flowers of sulphur,—Lump sulphur should be pulverized so as to paration of sedima sulphide, if it is more convenient to buy the sulphur already pulverized.

Price in New York of refined sulphur in rolls in the preparation of the sulphur already pulverized.

Price in New York of refined sulphur in rolls from the new York of refined sulphur in rolls of convenient to buy the sulphur already pulverized.

Salpharic seid of 66° H. is best transported in sheet-iron tanks which hold shout 1700 pounds. It shipped in this way, the freight is such that she than in gless carboys. The cost of such the sulphped in Sal Louis and San Tenoisco, is stance, from San Francisco to New Mexico, is stance, from San Francisco to Old San Francisco only \$1.67 per pound.

The solutions was supplied in the supplied in the solution is made by dissolutions of the supplied in t

infection by the estate of the estate of the estate of solution in the estate of the e

pounds, this number of pounds of section, and pounds the number of pounds of water, will produce a solution of 1 per cent concentration, and so on. Practical experience has demonated to concentration than 2 per cent, even if high-grade orces are treated. In that case increased volume of the solution is made to do the work. With low-grade orces are organization is solution of 1 per cent, and even less concentration secondary. With low-grade orce town works, it is best to begin with a 2 per cent solution of 1 per cent, best to begin with a 2 per cent solution of 1 per cent, and diminish its concent solution and then diminish its concents solution, and or most profiles. The strength of the solution, after continued use, and in most cases it becomes weaker. The changes, and in most cases it becomes weaker. The weaker is not a solution is a solution of the solution, as the continued use, and in most cases it becomes weaker. The ordinary or stock solution is made by disThe ordinary or stock solution is made by dissolving a proper quantity of sodium hyposulphite in a meseured quantity of water in the
storage tanks. To hasten the solution, steam
may be passed through the lead-pipe coil.
As the weight of a cubic foot of water is 62½
pounds, this number of pounds of sodium hyposulphite, added to each 100 cubic feet of water,
will produce a solution of 1 per cent concentra-

he weakening is caused : lat, By admixture of some wash-water hich may precede and always follows the

solution. 2d. By condensation of steam from the Kort

2d. By condensation of steam from the Kort.

2d. By decomposition of byposulphite through ing injectors.

3d. By decomposition of byposulphite through atmospheric influences.

4th. By decomposition of sodium hyposulties with copper sulphate in making the cutre solution. For each pound of copper sulphate in making the sulphite is destroyed.

On the other hand, the solution gains in present the content of sulphite is destroyed.

On the other hand, the solution gains in present the sulphite is destroyed.

Strength by eappration, but principally in present in the content of sulphite is destroyed.

Strength by sodium carbonate, with solution, sulphite and in the large amount of byposulphite. The more silver, lead, and of byposulphite. The more silver, lead, and salver, lead, and salver, lead, and the death of the solution so that cases may exist where salved, but the solution as the cases may exist where salved, but the solution may even increase in the loss in hyposulphite in the concentration of the solution has been determined by experience, ing the case in hyposulphite. The increase in salved, but facts solution, as will be shown latten of solution has been in use, cannot be estimated, as the extra solution, as will be shown in hyposulphite. The increase in solution, as will be shown in making the extra solution of a solution in hyposulphite, as solution, as will be shown in salver, even sproximately, by its specific gravity, for response that will soon become apparent, then even appearance of sections apparent, the second supparent, the second supparent of second apparent, then the second supparent of suppare

\*A paper by C. A. Stetefeldt defore the American In-stitute of Alining Engineers.

Written for the Passa by our Traveling Correspondent.]

EDITORS PRESS: --On my way to this place I passed through the several thowns and mining camps hereinafter briefly described. a success is a smelter, as it costs \$20 per ton to send our ore be Socoro.

No milling or mining men representing capital have visited our camp yet, but Mr. Spiller and mineralogists in the Territory, claims that developments will establish this to be one of the best camps in Mew Mexico.

P. H. McCarthyr.

Georgetown, M. M., Aug. I., ISSY.

### Coal and Iron.

Amos Bowman, formenty of California, but to several years past consolidated by the Canter of Case of Mining Engineers, in February and Geological Survey, read before the American Institute of Mining Engineers, in February products of the Far Morthwest, from which we in could be a collowing in relation to the coal and products of the Far Morthwest, from which we included the Facific Coast, California included.

The Pacific Coast, California included.

The Pacific Coast, California included.

The Pacific Coast in general, and the north-coal and tron. It is the true that honder Oral included.

Tocks were not deposited ander coal-making and included knowledge, the impression has goneral, and the coal included or the meeting at the conditions, and the Morthwest Dimester of coal included worth meeting at the second action of series and on Fuget sound, in adjacent United States and on Fuget sound, in adjacent base gone as the coal found worth meeting at the coals and worth making english and on Fuget sound worth meeting at the coals and in the western coast, there is and on Fuget sound worth meeting. I do not deposite of oas repetition of Pennsylvania and on Fuget sound worth meeting at the coals of a coal found worth meeting at the coals of a coal found worth meeting and on the coals of the foods of the

Formerly the counts in the short which a down grade of laf miles, after which a down grade of 14 miles brings us to bown grade of 14 miles brings us to the county as the county as

remained to the contribution of the contressent contribution of the contribution of the contribution of th

As small hamlet with some good farming and mining country about it. The place, which lies three miles from the Carson & Colorado railroad, contains about 300 inhabitearts. Both the town and the mines in the neighborhood are supplied with water from an immense hot spring near by, this being the only water to be apring a supplied with a supplied with water from an immense hot spring near by, this being the only water to be had

Benton,

Rewinder the procession of the

Nevada Notes.

We admit, unindorsed, opinions of correspondents.—Ens.

**СОРРЕЯРОЙ ВЕИСЕ,** 

A CALL FOR LABORERS.—The Courier says the demand for skilled underground miners is every day becoming greater in the vicinity of San Bernardino, and that the wages paid are equivalent to those given in Calico district.

The farmers in Owens valley, Inyo county, are also in need of more help.

THE OLD WAY.—Prospectors in Hawkhorne district, Nevada, travel with a bucket of water and a pan. Many of the piles of dust contain and the best way to find it is to wash it to water with water.

(To be Continued.)

WHEN the California and Chollar mills are in operation the volume of water now flowing from the Sutro tunnel will be increased by aparly 150 inches.

ments which the smith employs to-day to give to to ever which the smith employs to-day to give to the total lits forms. The Phomiosane, 2000 years see the wool, glass and metals which that server ments and commercial people par-excellence were manufacturing or getting from Asyria and from Egypt. It is from those countries and from Egypt. It is from those countries and from Egypt. It is from those countries are premised to the same of the entire for the transport of the Argonautic for the the fault of the war of Troy, appears as opening to a the European age of tron. The Inad sings and of the war of Troy, appears as opening to us far the European age of tron. The land sings and of the war of Troy, appears as opening to us far the European age of tron. The land sings on the far the far and of the war of the far and of the war of the far and of the decision of the material not useful and greatly yet common, precious for its rairly and greatly to Achilles, the latter replies holdly, proudly; to Achilles, the latter replies holdly, proudly; on the far the from here the gold and red comper as well as the women with the opper as well as the women with the singent by girdles of key eductors (shining iron) and all riches which I have at least obtained by late.

(Translated for the Prass from the French by M. M. M. [NORTHER IT]

Origin of Metallargy.

try between the Sambre-et-Mense, to the Association of Engineers (Section de Charleroi): The following is a communication by Victor Tahon, on the origin of metallurgy in the conn-

try beckween the Sandre-es-Meuse, to the 4st, try beckween the Sandre-es-Meuse, to the try beckween the Sandre-es-Meuse, the dawn of oivilization the first metals the dawn of oivilization the first metals keeper and the first metals aliver, opper and the first metals investigated breated separating iron from its ore came later, after the first essays of the post of tron. The medit we make a siderurgh, (ifton-working) upon the makive or meteoric iron, and the first estate of the poetic meteoric sciences have raplaced the fortion of the first essays of the metals simultaneously, and the metals simultaneously, and the metals simultaneously, and the essay to man tribe of the first essays of the first essays of the metals simultaneously, and the especial of the first essays the first essays of the first essays the first essays of the first essays of the first essays the first essays of the first essays the first essays the first essays the essays of the first essays the essays of the first essays the first essays the essays the essays of the first essays t

ing them, would have to be lett beeind. This deal to the the been would have to be lett beeind and would have to be lett beeing to be lett been would be the there being to the been the bour tor parting, the duality such that the beard all the been the the total the the collidren with their tabors, for Keinberg, too, had his fame, and the beard the collidren with their tabors, for Keinberg, too, had his fame, and with him. And this parting, as all well would be lett for the shoudened men the teles tood winter being now too far advanced to leave and winter being now too far advanced to leave and winter being now too far advanced to leave and winter being now too far advanced to leave and winter being now too far advanced to leave and with the collidren and live or stay with her the beard with her being now to be determined whether she would be cattesties of the wretched settler for purpose. This settled, the heronomy over and over as she presses each to her depart, then only in the cabin and passibly death in delay. The children meet to time for lingering, there is no time for lingering, there is no time for lingering, there is no time for lingering, there is danger to mounted on the backs of the mounted to the cabination to the cabination of the plane. The passage of the mounterin is successfully into the collidren meet in the cabin and a seally the rescuers and gone left in the cabination to the cabination of our shall stay and the seal of the control of the control of the control of the control of the cabination of the plane. The passage of the mountering is sectly at Sutter's for the control of th

LAKES DONNER AND CASCADE.

AMERS DONNER AND DASOADE.

The straint of the capture and states the first based on the save in the same states the states the state of the capture and the same states the states of the capture of the

Some the Great, It is a contracted a more abundant production of the state of the s

Broim Tuckoy has been visited by a terrific dust-DONSTOCK MINES AND MILLS TO BE LIGHTED BY THE STORY AND MILLS TO BE LIGHTED BY ELECTRICITY.—In a short time the leading mines and mills of the Comstock will be lighted have taken the basiness in hand. Three by electricity. Messre, Hobstr and Howard dynamos are being constructed in San Trancisco, and are to be delivered here within two and will be set up near the new water-power, the Merada Mill be it mine water power, the Merada Mill and Mining Company, in the southern part of the city. They will furnish to are lights and Lido incandescent lamps. Besides lighting the leading mills and mines, lights will be furnished to all in the city who amat them.—Termished to all in the city who want them.—Termished to still in the city who

Lakes Donner and Cascade.

Lakes; the former mand of the search of the sound of the

Truckee, the covertee of the carry, a seeping so to be a conding at Lake Donner, sleeping so believe that these may be a conding at Lake Donner, sleeping so believe that these may be a conding the condition of the condition of

Eroma, of the lete of Eibe and of Norique from which she will get the awords that are going to conquer the world. We have seen the going to conquer the world. We have seen that in the Vedic spoch, the sacred Hindoo cheek to us also, these marvelous songs, or poetry, and dependent on the construction with the use of the metals, of carved one in middle to cut bronze, but the will the use of the metals, of carved one control in the construction with the use of the metals, of carved one of gold and of the Vedas were the original than the sees, which indicate steel, the simple from not being able to cut bronze, but the Hindoos of the Vedas were the original stone, subjugated its avage inhabitants, innavenes, subjugated its savage inhabitants, imposed on them their language and their genus of their the see of the first germs of those that the great of the language and their gods, and the creat in the see of the constitution. In all the valley of the Unnutral Language and their dods, and the great indo-Germanic stream toward the west, we seek, we

Have begun to speak of iron as if it were in the handlent Bards.

Have begun to speak of iron as if it were in some manner ennobled in their eyes upon the feld of bartle. The brilliant Atbenian civilization, partle are to infer all the advantages which the Greeks knew to derive from reaching of Perioles. Among them every useful invention connected itself with theogony in the firm of Denositon, breaded which theogony in the farm of Denositon, the lame smith, who, in the person of Vulcan, the lame smith, who, in the person of Vulcan, the lame smith, who, in the person of Vulcan, the lame smith, who, in the Denositor the first disciples of the Ohalybes of the Edwin the Egyptian of the Manner iron in the case of the Edwin the Egyptian the Ohalybes of the Edwin and the Kredisciples of the Ohalybes of the Edwin and the Kredisciples of Arundel and of Paros, iron was worked unter Mulcan. According to the marble chronicles of Arundel and of Paros, iron was worked unter Mulcan. According to the marble chronicles and the real shore in the is strinbuted. Oarthage, Sicily, above the Egyptians and Greek, Glancus of Chio, that the at the Egyptians and Greeks. Home, the is all, the Etyptians and Greeks. Home, the after the Egyptians and Greeks. Rome, the after the Egyptians and Greeks. Rome, the feet the distinctived and sold from a second of the first shows the Egyptians and Greeks. Rome, the Brobes of Sibr and the rich mines of Enbass, of the Isle of Sibr and the rich mines of Fronces, of the Isle of Sibr and the Mondel and which she will see will see the will see works that Evone will see will see works that Evone will see will see works that

Establish the Presence of Iron

"Joiltoo eldissergeral" redtonA

evad eganice betrirtestru eti beacqoo virem only so, but many eminent financiers who for-The nee of silver as a money is growing in popularity among the masses the world over. Not etandard, though kept up with great persist-ence in certain quarters, is making little head-way. It is, in fact, rapidly losing ground, The warfare being waged on the double

to be manifested, and is likely to result in the countries are beginning to find out. By reason where the experiment has been tried, as these lately changed their view on the subject. California is not largely a silver-producing

define our anoestral people, it is to be hoped to the will svoid at least their more patent his schooling. Warned by the hard experience nor does he seem to have profited greatly by quences of an error a long time sconer than acknowledge and seek to correct in the past, opinion has cost John Bull much in the past, adoption of practical measures locking to a restoration of gractical measures locking to a restoration of silver to the currency sooner more ready to correct a mistake, once convinced they have committed one, than are the Euglish. The latter are great sticklers for consistency, and would suffer the consecuences of an error a long time sooner than acrons along the across a secuences of an error a long time sooner than across the consecuences of an error a long time sooner than of the policy heretofore pursued by that country. In Germany the same feeling is beginning a radical change, if not an entire abandonment Britsin have suffered to an extent that has forced her publicists, political economists and statesmen to gravely consider the propriety of metalism the industries and commerce of Great of her adherence to free trade and monothe creditor class. The demonetization of silver ver has worked only harm in every country all except that amail element that constitutes insemuch as such 'procedure would advantage would rather make some local sacrifices to protect them. But this is not necessary to the reinstating of silver on its former basis, world. As a matter of patriotism, we would not discredit any of our staple products. We which is the largest producer of silver in the the interests of the whole country—our country, But in discussing this subject we prefer to consult in price, the annual loss or gain to us is small. However much the cheaper metal may fluctuate country, our bullion consisting mostly of gold.

.I ot 31 thoda to star edt ta won gaied proportion has not varied much from 15 to 1, thousands of years. During all this time the value between the two has changed but little for combined to answer the purposes of money, there has not been enough of either metal alone, it being a remarkable tact that the ratio of while there has been enough of gold and silver вте вескіпg to proscribe. Ехрегіепсе вроws that ants of the world, which yet the gold-bugs sive currency of more than half of the inhabitwith gold has been in general use since pre-historic times, being to-day the almost exclusion. Here we have a metal that in connection desire and the general good requires its extensilver coinage, much as the bulk of the people vould be subserved by the further limitation of tant eree certain interests here that And yet for a variety of reasons, all narrow and selfish, the monometalists have a consid-erable following in this country. Strange as it

What madness, then, would it be at a time like this to intensity these troubles by augmenting enutul and to brager in regard to the future kind are increasing at a more rapid rate than gold and silver, the disproportion being so great as to be already keenly felt, while it ent population, wealth and business of every ples have until recently permitted both gold and silver to be coined without stint. At pres-The increase of the precious metals has in times past kept pace with the growth of popula-tion, industry and commerce, because all pecmuch so as gold. such stability in value, proves it to be especial-ly well adapted to circulate as money—fully as long and general age of silver, coupled with

the cause of them fully one-half.

earl to barotear ed emit boog ni llade ti tant bas , saisry 8.52 to rallob blog edt to taslaviape of silver and bearing the image and super-for the period of the following the state of the stat the American dollar, containing 412½ grains in this country. It is against our interests, our assess and our traditions. It has been decreed This talk about demonstizing silver is prepos-terons. It is a policy that can never be carried out

> the sojourner in California exposed. On this score his protected and his comfort these or similar annoyances is the traveler or quately paid by their employers. To none of ries is not tolerated, all servants being adeknown. Importuning the guests at our hostelextertions, can be escaped. They are foreign to our institutions and the ways of our people.
>
> We have no lackeys here; the "tip" is un-A New Resort for the Eastern Tourist, in coming to California all this undeserved ridicule, these numerous vexations and petty

An Industry Not Altogether Ap-

## preciated.

importance of the mining interest will be over-looked, or at least fail to be appreciated as it eds that Tagand a si erect sinvolifed ai gaiger Won basi refre taemeticxe has tlumut edt al

neand souls, or thereabout. ingmen represents a population of a hundred 25,000 or 30,000 men, not all of whom are, however, steadily employed at this business throughout the year. This number of workthis production requires the labor of some value of gold and silver included. smounts now to about \$20,000,000 per year, value of gold and silver included. To make deserves. The bullion product of this State

the destruction of all the important inin an economical point of view, be equivalent from the mines. To obliterate the latter would, our cattle and sheep and swine, and add them altogether, and they fall far short of the income of our vineyards and orchards and dairies, ii bluow woH ? gainoothron for on revile of the would it of the state state of the state of the proceeds it of the proceeds it is not state of the process it is not state of the pro affected were these twenty millions of gold an woH ? susae bluow srialts to notition observed wor of seirtsubai bas stasretai redto uno bluow that no such industry existed in the State-Now, let us suppose that the business of min-ing for the precious metals were abandoned—

dastries above mentioned.

as some of them complain of certain bring the mass of the honest grangers to grief, binow sidt viurT frames edt to srotitegmoo suppliers of the market, converting what are now the burders into ere, instead of creating demands, e -nim edt li neggad bluow tadw ,brabnata gnivil a woled taomia beautor vbasria era seitibo ricultural staples? If the prices of these com don their present pursuits and from consumers become producers of grain, fruits and other agneds of areaim to umra taers sidt erew lic to arotavitino edt toefts ti binow wod airgA

Just as they would become com would be drives to the towns and cities in search of work, to the great detriment of the madeirs, and every other class niend ent ta gaivil a saam won odw nem lose one-balf their customers and they the best paying half at that. Let mining cease or be ruinously orippled and thousands of hardy ot brofts amendaildates eacht to eroteirqorq edt or some or then were an end to come to would happen to the mean of the state of the branches of mining. And our foundries and machine-shops, what

The foregoing considerations may well claim the attention of those who have farming prod-ucts or labor for sale, as well as of the merchant petitors with the farmer so would they in such event come to compete with the handicrafts. man and even with the unskilled laborer.

spared any nnnecessary hindrance ed tasel is yam tramegarnoone isioega on and the manufacturer, to the end that the busi-rese of mining, if there shall be extended to it

and put into the pockets of the English bankers lar taken from the silver producers of America for wheat, and for whatever other products she requires from that kingdom of her own. Here is a clear profit of 20 cents on every dol-Tallob edt no state 001 ta segnade an the dollar of sends side of the opposite state on the doler of sends to some substance of sends to send t dollars; \$9,000,000 go into the arts, and En-Bland bill \$24,000,000 are coined into silver 000,000 a year. Under the workings of the silver mines at the present time is about \$48,-SILVER PRODUCTION, -The production of our

less efforts of the American to un-Americanize Company, at Calico, San Bernardino consumed just nearing completion, was entirely consumed Dow be it understood by patertamilias that by five on the 14th inst. these efforts of the American to un-Americanize THE 60-stamp of the Oro Grande Mining Mords the Parisian more amusement than

Per Line (agate) 1 month. 3 mos. 12 mos. 19 mo Annual Subscription, \$\$. New subscriptions will be declined without each in edvance. All arrearages must be paid for at the rate of \$3.50 per annum. people has for many years past been steadily people has for many years past been steadily frocted multi- increasing, until it reaches now a great multi- tude, including persons of every class, calling and station in life. The money spent by these excursionists amounts yearly to millions of dolars. Office, 220 Market St., N. E. cor. Front St., S. F. recreation or pleasure. The number of these ni need okad owericans who dave been in the health, worked an early change in the destination of With the swakening of Eastern tourists to the advantages offered by California as a place of resort and sojourn, there is likely to be

nd discomfort. It has long been the habit of the husbands yield to its exactions, however great the cost ot beniertenco steels medianoitnevnoo ot evels enjoyment, but almost solely in obedience to the mandates of fashion. With the ton it is considered the proper thing, wherefore the taken not because it is attended with any solid feel that they receive any adequate return. The John as blroW blO off to the John and the The The John and Joh lars, for which expenditure but few of them

their impositions and frivolities. ellame tracions richt their ancient smells, fies of fashion continuing to return to these bide of pleasure-seekers and sight-seers this way, few except the veriest anobs and butteroupled with the facilities that now exist for class of men a gleam of relief. A more widely diffused knowledge of this new Hesperides, cornia revealments there comes to this wretched even a partial success. Out of these late Calisand fathers so anhappily situated to protest

take place in the summer destinations of these The reasons for believing such change will against these European tours and to seek escape from so great affliction by every possible de-vice, but not until recently with the hope of

Silver (Poes, 114, Lakes Donner and Usecaucy Origin of Meishlurgy, 115.

MEGHANIOAL PROGRESS—Worldy Eurhoo of Public Strates of 18 Publy; 56f or Mild Steel; Necessity Eurhoo of Invention; Expansion of Steem; Effects of Heating worlds" in Steel-Making, 118.

Physical, Vital and Psychic; An Into Exting Worm; Predicting Worm; A Thubuch of Pendulum Observations; A New des; Parior Perature Worm; Westher and Kails; The Availability of Cotal Deposits, Westher and Mails; The Availability of Cotal Deposits, 118. by a third than of going to Europe, and then with greater expedition and comfort and at less less cost. The expense of coming here is less people of passage are numerous and cogent. In the first place the trip to California can be made co Notes, 114. MEOUS.—Coal and Iron; Liviviation of Silver Ores, 114. Lakes Donner and Cascade; Origin So, IV.

ILLUSTRATIONS.—Carbonized Mine Timber; The Ross Minivg Co. is Elevator to Likfung Tallings, 11S.

Lakes Donna and Gaesada, 11S. Hoffmann's Petent Dyeing and Bleaching Apparatus, 11Y.

OORERSPONDEM.—Nevada Motes; New Mexico Notes, 114.

ame should go to see-nature rebels against it. Arrived in Oalifornia, the tourist and a him-It was not intended the genus arod ased svad bluow so asinesis, tenina a squaric mrod ased svad bluow so asinesis, lemina long exposure to an unnatural element; for we his journey instructed and refreshed, whereas he who '' goes down to the ses in ships'' gets to the other side damp and tired through such to bue and seaches list d reselves the end of and the sublime passing before the eye in a grand panorama. Feasting his gaze on such perfect and perpetual landscape, the transstrention, whereas the trip overland leads through scenes wast in extent and infinitely varied, the wild, the beautifuld by sea there is little of interest to arrest the guigavoV i siriarq bas nistanom edt to ris sentient being indifferent to death by drowning. s srebner tadt yrseim ylno edt si sidT elif a ni esiwi llesmid expose himself twice in a lifesea-sickness is a malady to which no self-re-

-taluseqs-non s ed ot misls tsomls yam slatem snoiveral staples, mining tor the precions for their stability and safety. What with the conners that are constantly being effected in wheat and oil and other of our agricultural will be universally recognized as a business em-inently sate and profitable. Even now it com-pares tavorably with many purentis notable week and day by day it shows improvement in all its departments, and it will not be long till it dustries of the country being more so. Week by and everywhere properous, none of the great inself not in a strange country, as in Europe, where he has to get acquainted with new social considered as a whole, is everywhere progressing It is enough to say that the business of mining, dividual failures or mishaps do not now much hurt this industry, these events being local in their significance and limited in their influence. individual successes do not much help, so in-

of the ignorant and boorish stranger. Mothing begins to make sport of the linguistic attempts distely the Yankee turns his back the native itic and too polite to laugh in his face, imme rision at their attempts to speak it. Too polthemselves to scriming a tongue of which they-enced in learning just enough to excite depick sent to his room on a silver salver. Speaking a language that all understand, the newly arrived in California are not obliged to apply charge for a lucifer match or a wooden toothseeking a tavor, insolent and careless when they have got it. Not here when he comes to settle his bill is he confronted with an extra nedw gaigaire bas suciupesdo lla-xod-tad sid who passes the salt or the porter who smashes him his cost or cane, and again by the waiter makes his bed, then by the garcon who hands victim of the "tip" and the douceur at every bitte de chambre who Not here, as in the Old World, is he made the trymen, with manners and habits like his own. forms and customs, but among his own coun-

stirem sti to enom yes emit sith ts non liw ew ti doidw to toeids ent no egisle redtini ro PRESS a portion, if not the whole, of this work, hydraulic and mechanical engineer. As we purpose to reproduce in the columns of the ly so called, a subject of great interest to the of Mechanical Engineering in the University of California, consists of an able and lucid exposi-tion or analysis of a hydraulic step, technicalhas been laid on our table entitled " Hydraulic Step," which denotes the subject treated of. This work, prepared by F. G. Hesse, Professor

THE WORK OF A SCIENTIST.—A pamphlet

events on the Pacific Coast continues to run smoothly. This current, indeed, moves now with too strong a tide to be easily ruffied. As

As for some time past, the current of mining

Passing Events.

EDITORIAS.—Formation of Coal from Mine Times The Elevating Tablings, I.I.S., Passing Footist, Makesort for the Eastern Tourist; An Industry Mew Resort for the Eastern Tourist; An Industry Mey Resort for the Eastern Tourist; An Industry Mey Passing Passing Table Ta

TABLE OF CONTENTS.

Saturday Morning, Aug. 20, 1887

SAN FRANCISCO:

SCIENTIFIC PRESS PATENT AGENCY. A. DEWEY & CO., PATENT SOLICITORS.

Entered at S. F. Post Office as second-class mail matter

Our latest forms go to press on Thursday evening

Advertising Rates.

Terms of Subscription.

**ПЕМЕХ & СО.**, Рарізаветя.

CIENTIFIC D'RESS

Address all literary and business correspond Drafts for this paper in the name of the firm.

### Elevating Tailings.

(Continued from page 113.)

point where gold was found. The golden wash is, however, worked on a higher level, but in the intervening space chutes and feeders to fill 350 toot level, and a drive was put in under the tained, which is equal to about 9 dwt, per cubic yard. A chamber has been opened out on the feet, 2 ounces, 8 dwt. of gold to the set was obthickness, and, from the prospects, ought to pay handsomely for working. From the mon-key shaft, which is about 6 feet 6 inches by 4 Mr. Cassius worked, is about 5 feet 6 inches in the result that payable gold was struck. The wash-dirt, the color of which is similar to that sunk 10 feet below the level of the tunnel, with touch payable wash; then a monkey shaft was structed at the end of the drive, but it did not from the shaft, one going soross the flat for a distance of 400 feet; but no payable ground was found. A jump-np 30 feet in hight was condrives were continued in various directions drainage engine in 1872. They therefore opened out at 315 feet, 350 feet, and 380 feet, and working on previous to the stoppage of the them again to open out in the deep shaft, to try and find the bottom Mr. Cassius was holders, and this appears to have induc which are run out and emptied over a tip-head. This mode of working has not, so far, been remunerative to the shareemptied on to an iron grating made of iron rails. The fine fetoff falls into a sluice-box and is certicd away by a stream of water to Donnelly's oreek, while the stones fall into trucke, while the stones fall into trucke, while the stones fall into trucke,

up to their full power. 8 strokes a minute, with about 6-foot stroke; or, in other words, the engines are nearly working l column 207 feet, and another 96 feet, working two columns of pumps, 15 inches in diameter. One of them works I column 135 feet, and another 36 feet. The other engine works with the tail-race. Each of these engines works are placed in a chamber in the shaft on a level The company has 2 hydraulic engines, 18-inch cylinders, with 9-foot stroke, which are working under a head of 314 feet of water, and the trucks can be placed.

## Mining Accidents.

Thomas Ebert, working in the rook quarry At Crested Buttes, Col., Henry Jamison, a miner, fell down a shaft last Saturday and was instantly killed.

mangled by a premature blast in the Derbec drift mine, a piece of rook being driven through the root of his bir right eye down through the root bir month. His burte, it was thought, wonth of S. S. Shockin, near Sonoma, was accidentally killed Friday by the falling of a large rock. On the 16th inst. Frank Gallera was terribly

Seven men were badly injured a week ago in prove fatal.

debris. H. Cole, S. Cox and Ronnel received worst injuries. Oole will probably lose one eye.

The same day a Chinaman was instantly likely in this tunnel, his head being crushed by fellies are the constant. off their feet and covering them with rocks and a pick and an explosion followed, knocking them the Siskiyon tunnel. A blast had been fired, but all the charges did not go off. When the men returned one of them struck a charge with

Michael Harley, a miner working in a drift

irit dan desae ib treen mort desab beqqorb ,enim at the 1500-foot level of the Con. Cal. Virginia

Just So.

inel, one of our most valued exchanges: The following we take from the Julian Sen-

The Mining and Scientific Press, published by Dewey & Co., San Francisco, is a great fractife in this camp. It is said that our last our last out the peace has one on his table to swear miners with.

good one, even assuming that a Bible might be found in the camp. no renim taenon ant gninaswa to And the judicial head is level. This practice

traced for three miles. August with the money." Parties tell us there as \$75,000 in sight. The selling price is only richer the deeper they go. Some silver assays run as high as \$5000. The range has been Some silver assays the experts who came to examine the property if they would consider the shere on the other on the other on the other or are sener. 35 to 100 feet and enlarging and becoming Los Angeles county, over the gold and silver mines being discovered there at depths of from bonded, that they would pay all expenses of THERE is considerable excitement at Lang, murnA do Salaras & siva(I sees save) eniques of sirara mine and the salaras siraras si

Death of Ex-Senator Sargent.

oon publishing the Nevada City Journal. He Beginning life as a printer boy in Masse-

snbeequently studied and engaged in the prac-tice of law, until in 1860 he was elected to

After serving three terms in the House of Representatives and one in the U. S. Senate, he

warm personal friend of the ex-Senator, says:

cieco, where he resumed the practice of law.
Chief Justice Searls, a political opponent, but

ner T nes of bearmed and returned to San Fran

tion, as Minister to Germany. His vigorous support of the graps of American port-ship-pers rendered his position at Berlin so unpleas-

es sent, under President Arthur's administra-

Hon. Aeron A. Sargent died very suddenly on Sunday lest, Aug. 14th, at his residence in this city, after a brief illness, from which it was hoped he was recovering.

Railroad Lands Thrown Open.

q nister of tdgd brad a sbam even

The Atlantic & Pacific Company seems to

Paul and Winons & St. Peter. These are still under consideration and undeoided.

named in the scoretary's rules of May 23d last, except the 3k. Paul, Minneapolis & Manitoba, the Hastings & Dakota, the 3k, Paul & Paolino, Paul & Sioux City, the Sioux City & 3k. Paul & Sioux City, the Sioux City & Sk.

the case of the Atlantic & Pacific alone. The order also applied to all the other railroads ail noisiosb sidt ai bevloval era seros 000,000

ander the pre-emption and homestead law. It is stated that between 25,000,000 and 30,-

sects that they may be restored to settlement Railroad Company, and in a long letter to the Commissioner of the General Land Office diands for the benefit of the Atlantic & Pacific

no sada mosgaidssW most bedgespeles sew M and selesters of the International of the Secretary of the International Secretary of the Secretary

ratus. Patent Dyeing and Bleaching Appa

in the vessel, and in a pipe and force-pump for pumping the dyestuff from the vat up through lairetam edt gaisserq rot soiveb a ai ;beadaoc etaffe; an interior vessel having a lower and an upper toraminous diaphragm between which the material to be dyed, bleached and dried is

vessel B is provided with a foraminous dia-phragm, O, forming a bottom, and another foraminous diaphragm, D, forming a top, the drawing which presents a perspective view of the appearatus for dyeing, A is a vat or tank. B is an open-ended vessel, annular tim or band. This vessel is placed within the vat, and a cirromagnetic in placed within the vat, and reason of the smaller dimensions of the vessel. The vessel B is provided with a foreminous diaversel B is provided with a foreminous diaversel B is provided with a foreminous diaversel B is provided with a foreminous diaversel. ug description: Referring to the accompanying resalily comprehended by consulting the follor erom ed liiw noitnevni sidt le toejde edT

perforations of the apper disphragm being smaller than those of the lower one.

A is a bar binged at one end to the side or

As the conting the presents are the control of a factor of the presents are the control of the c rim of the vessel B, and provided with a catch at its other end, by which it engages the rim of said vessel. At the center of this par is a nut,

have been turned back.

whereby liquor from space a may be pumped up into and through yeasel B.

liquor in the vat.

any source of heat.

which is in successful operation in a dyeing-house in this city, are: tenteragge sidt to rovet ni staiog niam edT

Worl busta of beeogque ediq ris-tod a si V

is an ordinary steam pipe for heating the

discharge end of this pipe is provided with di-verging nozzles 9, to distribute the liquor dis-obarged. H is a force-pump in pipe G,

its bottom and entering again the vat and the versel B under its bottom disphragm. The

de a sosque out fmort duo gaiasque eqiq a si O

the foreminous disphesem and intervening ma-terial; and in a hot-rir pipe for drying the ma-

This invention, briefly described, consists of

and unlimited coinage. Nothing is more certain than this. With 60,000,000 on inhabitants, these United States can easily absorb fity millions of silver annually, fully a third of which is consumed in the manufactures and the

DURING a recent earthquake in Chihushua, Cal., and it it is found a large amount of land.

w as tost ni yaisb eldatirev a ed ot gnisimorq by Harvey Springsted and T. J. Blakemore, near Blakemore's ranch, on Trinity river, is

THE New discovery in quartz recently located

We quote this paragraph:

Oritioism upon the alleged shortcomings of the Government with respect to this grant came with an ill grace from this company.

The people, whom the Government represent, had some rights under the grant as well as the company. On full consideration of the whole company. On full consideration of the whole nity purposes, if permissible under the law, and the troocation would not be accountive authority, that such revocation would not be a violation of stated and and the thority; the times are defined by the company, the time has a violation of the company, the first of the company and justice demand that their pavile and all points and late the state of the company and justice demand that their public policy and justice and some regard had for the rights of those seeking and needing had for the public public public public demand on the public demain.

is a power which corporations must respect. We quote this paragraph:

ceived with satisfaction as showing that there

the Government in the matter, etc. Secretary Lamar's comments upon this point will be re-

Mexico, a spring of excellent water broke out and has continued to flow ever since.

\*32'000'

the lands now thrown open, alleging errors of " As a man, he was apright, honest and true to

HOFFMANN'S PATENT DYEING AND BLEACHING APPARATUS.

Тне Кіир ог а Міик то Наче. -- Тре White

is thick with salt. It is considered a valuable find for Oregon, a State heretofore dependent on testide sources for her supply of salt. Vate are being built to evaporate this water into

of good salt. All through the center the water

east of Silver Lake, Oregon. It consists of a marsh 80 feet soross, around the edges of which the ground is covered with a three-inch layer

has been discovered at a point 10 miles north-SALT IN OREGON. -- A valuable deposit of salt

Mr. Sargent was in his 60th year. He leaves

strong partisan in politics, had very many things in his character to admire."

possessor of excellent qualities, and, although a

his friends; as a lawyer, he was active, energetic and brilliant; as a citizen, he was the

aretaguab owt bas ace eac wobiw a

don mine, Plymouth, has penetrated a ledge of It is reported that the drift in the New Lon-

ARTESIAN water is being bored for at Huron,

river-bed dry nearly three miles in length. It is anyposed when that is done that the harvest

water now in the river, which will leave the

construction for more than a year, will be com-pleted in a few days, and then the river will be turned into it. It will more than carry all the

the Stanislaus river, which has been under

THE big tunnel, near Robinson's Ferry, on

This machine is the invention of Mr. C. A.

4. Without being removed from the appa-ratus, the dyed or bleached goods can be dried with a blower, connected with the appa-

ed out without removing them from the appa-

stay in the natural layer. 2. Colors that require several baths, as is very often the case in cotton dyeing, do not necessitate the removal of the goods from the

or cockon yarn, which cannot get entangled or damaged in any way, because through strong pressing every ther is constrained to

One mean on the same of the sa

spparatus in changing the bath.

. The dyed goods can be very quickly wash-

.eanemmi ed Iliw blog to

Hoffmann of this city.

The Three Forces-Physical, Vital and

[Written for the Press.]

One fact is a construction of the period pleas. The other principle, on the fact is observed by the principle of the properties in the school of the principle of the principle of the principle of the properties of the principle of the

dinary railroad track.

EXTANSION OF STEAM.—The results of a foreign of and can be packed upon any of the foreign of the investigation of the imitations of the expansion of steam can be epitomized as the expansion of steam can be epitomized as follows: The condensation of steam in the follows: The condensation of steam in the contensation of steam at the point of carbon carbon control and while being exhausted. S. To the steam of osst iron exposed to the centering steam of osst iron carbon contensation in the carbon contensation in the steam of the point of the contensation in the steam of the steam is the condensation of intial condensation because of its short duration of the steam is the condensation of its steam jacket is not so conomizing cost. The steam jacket is not so the steam condensation of the steam jacket. From the puper call property of the steam is a function of the ratio of the steam jacket is no condensation in the puper of the puper of steams of the puper of steams of the puper of compound cugines. The puper of steam is not seconomic and the foreign of the steam jacket is not seconomic and the steam of the steam of its not condensation of the steam is a function of the number of expansions, of the steam of the st

EFFECTS OF HEATTIGE AND FORESTING ON IRON.

—In the course of a paper on the effect of heating upon from and seles), before the deferrants of
ciety of Engineers, Herr H. Stein related the
following experience: While examining the
tention was called to curious cases of failure in
the drill rods. These were forged from square
teel billes, the farts step being to forge them
into rectangular bars, then into square bars
facel billet was partially forged into the success
facel billet was partially forged into the success
side billet was partially forged into the success
side billet was partially forged into the success
facel billet was partially forged into the success
side billet was partially forged into the success
resenting the different extructural obsances. This reresenting the different extructural obsances. The scene
while those parts representing the former corwalled important extructural obsances, the octestaken jolished, bardened a denser metal.
Whenever the edge of the pit happened to come
was therefore parts represently as teel done square bar showed a denser metal.
Whenever the denser speel, they steel acted well,
but whenever the line into crossed it, and the edge
on hardening. The result was the connex broke off assity, or the center was to
connex broke off assity, or the center was too
connex broke off assity, or the center was too
perienced.

A Taregrae To the Blackesning with round
perienced.

A Therever to the blackes with the species of the stripe with the same sex-

A TRIBLY TO THE BLACKEMITH.

A Gradner, in a secure before the Society of Sardner, in a secure before the Society of Sardner, in a secure before the Society of the Society of the Society of the Society of Sardner, in a secure before the Society of the Society of the Society of Sardner, sparked by a series of Sardner, in the Sardner of Sard

**Треснернее Реоспесся.** 

Working Surface of a Pulley.

The search of the search of a Pulley, which we shall be considered to the search of th machine can be so constructed as to be driven at a much higher speed than was employed in this first one. Such a machine will be of great value in making changes of gange on roads. The machine is very simple and inexpensive in construction, and can be placed upon any ordinary railroad track.

Borton Millo Street, and the right direction.—
Solow Journal of Commerce.

Boston Journal of Commerce.

Boston Journal of Commerce.

Boston Journal of Cores, asid that "Edging in the street of the same and a sold that "Edging where for the street in the present day, when the saverage 12 per conty, he used to return on an average 12 per conty, he used to return on an average 12 per conty, he used to return on an average 12 per conty, he used to return on an average 12 per conty, he used to return on an average 12 per conty, he used to return on an average 12 per conty, he used to return on an average 12 per conty, he used to return on an average 12 per conty, he returned to mot exceed \$\frac{1}{4}\$ per cent of the plates and per cont are ordered in steel, and of these 98 per cent are ordered in steel, and of these 98 per cent are ordered in steel.

So much for the occupant of policies in band, as well as boiler-makers have in mild attention and every broilers by other ordered in steel.

Mr. Adamson illustrated the archority of recently had to repair, the fire-box of which case of a portable sugine steel boiler, which he case of a portable sugine steel boiler, which he conditions are the portable sugine steel boiler, which he conditions are the portable sugine steel boiler, which he condition is and every broken, but there was not at single creek to be found anywhere. He four the was not at a single creek to be found anywhere. He declared that had to repair, the free was four the suggest of a portable sugine steel bring at the regards soft steel for my subjust at the same colorion, and a stein gas the same application, and a stein gas the bean approached by the sugine see the sum and the sugards at the Adamson want no bester a river-head of steal. We want on obester maternal solution in the the sum and the sugards of the sum and the sugards at the sum and seen a river-head of steel summary sers, I have not some worker seen a river-head of steel summary sers, I have not some worker seen a river-head summary sers,

with the contraction of the conditions of the condition of the conditi

SCIENTIFIC PROGRESS,

Psychic.

gineer," writing upon the effect of cold weather upon the effect of cold weather upon relived from, holds the ground that low remperatures do not decrease the strength of rails. This is the view commonly held, as the cond weather. The reason for the breaker in the fact that when the ground is trozen it less in the flestiffer. The care to the reason for the reserving the fact that when the ground is trozen it lesses its sensitive, when, however, the heavy train runs over the rails, something must give way. In the summer, the ground, being univorsn and the summer, the ground, being univorsn and the selection elastic, yields, but in winter being those it is inelastic, and hence the rail being those it is inelastic, and hence the rail being those it is inelastic, and hence the rail being the supplies the selection and present it is inelastic, and hence the rail being the supplies the supplies

PARLOR PARADOXES.—Two interesting physical syperiments are amusing irrench selectified and inch the strets a lighted candle is placed before it is blown upon hind a bottle, and the latter is blown upon with the breath tron a distence of about a storont and the bottle quickly extinguishes the around the bottle quickly extinguishes the around the bottle quickly extinguishes the stinuch to bottles are placed on a table, with a stituted for the bottle. For the second experiment would be impossible, as the storont and the second experiment the fame, bottles are placed on a table, with a space of half an inch between them. The earnerst a before, on the opposite side, the breath is blown emartly against the fame, breath is blown emartly against the fame, if will the latter continue burning, but if will the latter continue burning, but if will incline slightly toward the operator, as if will incline slightly toward at the operator, as if the incline of the sir cannot pass shown mon, analogous to the first, is due to the fact the bottles, and is forced around them and back toward the experimenter. An analogous to the sir cannot pass between the bottles, and is forced around them and back toward the experimenter. An area around the and back toward the experimenter.

and down without any accident whatever.

A New Gas, which is pronounced a brilliant discovery by Dr. Theodore Cartins, is announced in a recent aumon of Garman and Garman discovery by Dr. Theodore Cartins, decerding to Nature he has succeeded in preparing "the long sort for hydractics, According to Nature he has a tried of hitherto being the control of the control

Alexander recently returned from Mani, W. D. Alexander recently returned from Mani, where Alexander recently returned from Mani, where he had deep en argaged with Mr. E. D. Hreston of the United States Coast Survey in making pendulum observations on the summit of the wall of the contest of Halakes, I twas one of the most ardnous pieces of work the professor hea extinct ortester of Halakes, I twas one of the well and extended and electrations were carried such a distance. Observations were first taken at Halku, an old descrivations were carried such a distance. Observations were farst taken at Halku, an old descrivations were and had plenty of ice. Fortunately the professor took with him a kerosene oil stove, and the sea the pendulum the recessor oil stove, and the work are note successful. On the summit the the pendulum was saveng. On one side of the pendulum was saveng. On one side of the pier was built up with coment, and the work are not are not and the work are not are not and the work are not are not always and the work as enong in the sea level. The state work of the sea level. The summit the sea level. All times less in 24 hours the ser professor. As summit the work and the sea level. The sea the form the sea the pendulum the sea observations will find the density of the mount. A large number of men, mules and horses whis and to be called into requisition to carry out this work. All the instruments were carried up and down without any accident whatever.

is ejected every ten minutes upon the iron.

This liquid renders the iron soft and spongy,
and of the color of rust, and it is then greedily
devoured by the insect. "There is no exagger.

i'in the assertion that this creature, for its
is one of the most voracious kind, for it
has devoured 36 kilograms of rails in a fortnight!"

The Avallability or Coal Deposits.—Scarcely was coal discovered, and adapted to conomic purposes, when a discussion began in regard to its continuance and to the length of time the available supply would meet the requirements made upon it, and questions in regard to the development of the resources of this mineral began even before a thorough "in-this mineral began even before a thorough "in-this mineral began even before a thorough "in-

Au Iron-Earthee Work.—A Greman paper — name not give be flowed by the Iron and Jones.—A Iron-Earthee Work.—A Greman paper — name not given — quoted by the Iron and Coal Jones Review of London, Eng., selist selist selist. The second paper series to large second paper and the second paper of the second paper of the second paper of the second paper of a felestable microbe which been discovered of a detestable microbe which fleeds upon iron with as much gluttony as the phylloxers upon the value of a detestable microbe which generally and the second paper of the se Mioroscopro air and liquid bubbles exist in many crystals of mineral, no less than 4,000,-000 having been estimated to have a place in a cube off a fuertz one-twenty-fifth of an inch square.

A NEW AND WONDERFOL RIFLE.—The new rids with which the French inlantry will be aupplied before next spring is, according to all accounts, a wonder. It is known by the near of its inventor, Lebel, and is smaller and lighter than the rides now in use; the French addition of its inventor, Lebel, and is smaller and injuries call it. 'the little gun.' The most artichentic descriptions given to the gun agree artichentic descriptions given to the gun agree artichentic descriptions given to the gun agree that of any ride herefolder in use. The gun that of any ride herefolder in use. The gun that of any ride herefolder in use. The gun that of any ride herefolder in use. The gun that of any ride herefolder in use. The gun the examined there is a campound of which the French der used is compound of which the French der used is compound of which the French der used is compound of which the French of the gun is very small, and the will carry its bullet and a searly as a second. In the tests made by the French Government, this pointed at the more there is not easily as at ten paces. The sulfer a said to new pendertaked a brick wall, and the tests made by the French Government, this pace as distance of 500 yards. At a distance of more than a mile it will pass thought inches thick at a distance of 500 yards. In the tests made by the French Government, this pace of a thought inches there are seinted a browder gun has no recoil under hie, and the cartridges are seinted the cartridges are seen the seasy and the cartridges are seen the seasy of the powder or maximum. The Lebel gun ammunitien as againet 116 rounds, formerly considered the maximum. The French Government is now making these gunes at the race of 500 a day, and is preparing to turn out double that number. USEFUL INFORMATION,

ENGINEERING DOTES.

Connecting the Mississippi With the

The importance of a ship connection between the Mississippi and the Greek Lakes, brough the State of Illinois, is attracting increased ar-tention with every succeeding year, both as a master of commercial interest and as a war measure. Great Lakes,

the State of Lilinois, is attracting increased astamester of commercial inclorest, both as a war measure.

Suoh a canal, large enough to admit the peasures and as a war measure.

Suoh a canal, large enough to admit the peasures and as a war measure.

Suoh a canal, large enough to admit the peasures at dis to commerce and a month-needed measure.

A great and to more than our northern border this gland and Canada.

In accordance with a treaty between this gland and Canada.

In accordance with a treaty between this the two countries bugland and men archiver on the peasure the state of t

## Sabmarine Tanneling.

There appears to be a renewed interest in this country in regard to submarine functing. Hitherto American engineers do not appear to have been very successful in their efforts in this direction. There as railway turnel as the only one of the kind in their efforts in the only one of the kind in this country. The relative that the only one of the kind in this country. The relative while is is was prosecuted for some time, was the encountry. The varience and this is a price of the foreign river turnel as the United States is not of these enter the price of the control of the nor event date, was for many years abandoned. The non-success of these enter the united the latest the variences of the more tecent date, was for many years abandoned. The united the states of the nonger than the presence of the more than the presence of the nonger than the proposed Hudson river turnelly to see a prosecuted to a construction of the prosecution. The essence the turnels of the flat of some time. These ser the turnels of the flat of some time. These ser the turnels of the flat of some time. These ser the turnels of the flat of some time. The essence the turnels of the flat of some time. The essence the turnels of the flat of some time. The essence the turnels of the flat of some time. The essence the turnels of the flat of some time. The essence the turnels of the flat of some time. The essence the turnels of the second of the most that the flat of the most that the flat of the most that the flat of the most extended to the maintand, the contract for which the man of the most extended to the flat of the flat of the flat of the most extended to the flat of the flat

Gounectine the German and Baltic Seas.

Early in June last, the work of constructing the canal which is to connect the German ocean with the Baltic sea was formally begun by the German Emperor. The ceremony, which took place at Holtenau, on the Bay of Kiel, consisted of the laying of the foundation. It is estimated that the Baltic end of the canal trie as stone of a lock near the Baltic end of the canal trie will be 156,000,000 marks (about \$39, the Reinney will be 156,000,000 marks (bout \$39, the Reinney of a laying of the underfacting will be 156,000,000 marks (but of be being constructed by the major the major the major that the Baltic and the major the major and military purposes. have the transfer of the pear in the continuous that safe the control of control of control of the control of the control of the control of contr

BLACK VARVISH TOR IRONWORK.—The following; is given by an exchange; "To make a
good black varnish for ironwork, take 8 lbs. of
good black varnish for ironwork, take 8 lbs. of
add 2 gallons of boiled linneed oil, I lb. of litharge, ½ lb. of sulphate of zinc (add these slowly
nor it will fume over,, and boil them amber and
boil for Z hours longer, or until the mass will
become quite thick when cool. After this it
should be thinde with turpentine to the propex consistency.

BLACK VARNISH FOR IRONWORK, -The fol-

THE Boston Journal of Commerce tells a funny store of the paston Journal of Commerces funny story or at commercial traveler, friend. He was in a lumber-mill in Maine endeavoring to impress upon the enterprise of the policy, were abominably dirty, and the whole etc., were abominably dirty, and the whole etc., were abominably dirty, and the whole sheet of the condition of the whole friend inquired if the boiler-room. Out traveling friend inquired if the boiler had ever been friend inquired if the boiler had ever been cleaned out. 'Oh, yes, menered the attect and the pastend ant, pointing to a bunch of ragged through the attect the boiler?" asked the gentlerever been into the boiler?" asked the gentlerever been into the boiler?" asked the gentlerever been into the boiler?" asked the gentlerever of the gripester. 'I'll tell you," said the stick of she boiler?" asked the gentler feller and went to lift out the plate, and I'll be aboveler of shavings; 'me and and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and when the mach went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the plate, and I'll be and went to lift out the beautiful and went to lift out the went

what is seed over a considerable distance.

What is Sea Coal. "Those of our readers who have passed over a considerable distance on the shady side of life will remember that among the varieties of coal in the market in their younger days was one called "sea coel." But it is hard to find any one at this time was but it is bard to find any one at this time was but it is bard to find any one at this time was been. Been, it was been been, it was as sea coal. The term was first used in England in the time of "good Queen Been, it was as sea coal. The term was first which less, to designate any coal brought by see. It was a finely intended to distinguish between the ordinary intended to distinguish between the ordinary intended to distinguish between the ordinary and the form a pould be kept up anyware a tribe that the term should be kept up anyware a that the term should be kept up anyware at the the term should be kept up anyware at the the term so it the advays to be delivered at the Use Vork or a the term of the lately one of the items of the Northed proposals for coal for took for the new of the Sas Coal for use in the service could be some antiquated officer in the service could be cond one of the items of a the account of the same and the service sould be the ordinary and the service sould be the ordinary of the service sould be the long of the service sould be the long of the service and the service is sitting " " by a serviced file."

THE Boston Journal of Commerce tells a strain four of Journal of Commerce tells as

WHERE OUR MACHINERY Goes —An example symptoms of a chronic character, such as dysination of the statistics of our exports of iron pepals, metallic taste, colic, constipation and steel products for the past nine months distribus, netvousness, and pains of various

Brass-Workers' Disease. GOOD MEALTH,

How Oir Wears Out.—Oil seems to wear to word way out by long-continued use, and to lose, to some out by long-continued use, and to lose the minute suggested as a reason for this that the minute spherical globules of which the oil is conceived to be made up, become flattened by the wear and pressure, and so do not slide and roll over each other as easily as before.

To KEEP FLIES AWAY.—Geo, E. Doering, Ph. D., informs one of our medical journals that an alcoholic solution of oil of wintersen rubbed on the marble slab of a soda fountain will keep the flies away and not prove disagreeable to customers. It is well known if that all essential oils are poisonous to insects. If from soda fountains why not from all other places?

WORRING UP OUR COPPER PRODUCT.—Inoreased interest is being taken in the statement
that the turning of a part of our copper prodtuct into articles of commerce will form an importent part of the industrial improvements at
Dollar Bay, by the presence in the district of an
expert who has been looking over the Houghton rolling-mill with a view of purchasing and
ton rolling the machinery in the new venture.

INCENDIARY BIRDS.—A new complaint bas been raised egainst that troublescome bird—been raised egainst that troublescome bird.—Been raised egainton. This bird, it seems, was resonable for the recent burning of the Paters con (N. J.) iron works. The birds atleas, atterwa, paper, paper collars, etc., and built nests of them in such profusion that, when a spark bodged there, fire was inevitable. The birds were at least suspected of being concerned in the burning of the Rey. Dr. Parker's church is ew years ago in Hartford, Conn.

FOR A KITOHEM FLOOR, especially one that is rough and weren, some one in the N. X. 7775.

Tough and weven, some one in the N. X. 7775.

Was recommende the following gine paint: To three pounds of spuce yellow add one pound, or two pounds of spuce yellow add one pound, or two pounds it desired, of dry white lead, glue in one quart of water, striving other north send mix well together. Dissolve two ounces of glue in one quart of water, striving other north send on the for a tough door. Use a compensate after the meaner of mush, until it will spuce and when dry apply poiled linesed oil with a all orevices of a rough door. It will dry soon, all orevices of a rough door. It will dry soon, all other dry apply poiled linesed oil with a sel or one paint-brush, in a few hours it will be found any on for a few days. When it needs oleaning, use hot suds.

INCENDIARY BIRDS,—A new complaint bas in the complaint has

Very little attention has been paid in bieg meen between the country to a sertain class of disorders observed among brass-workers. The beet known class of symptoms is that constituting what is called to symptoms is that constituting what is called to symptoms is that constituting what is called to the tunes of the mess. The metalic copper and then by a distinct chill, with headache, and then by a distinct chill the two days, but is libable to a relapse, the nown of Birmingham in 1853, and stein by Hirt. Brass is an alloy of copper and sinc, I have a described by Green. It has brass-counders ague was an acute poincing with a function, because it is not be. Greenbow believed, therefore, that brass-workers from the process of making, the sinc deflagrares and sinc. I have a distinct trace meletar. Heached, Delice in that brass-workers acute of the mingled from the trace was an acute poincing with a function. But the trace workers in the served among tine on the neck of the sum of the crown and on the neck being that brass-workers and states his and states his and states his the sum who are copper or brase-workers and states his being that brase route copper to the action of the served manners in a slightly hackers are of the copper or bare or or brase-workers are often copper or brase-workers are observed. These often points to an absorption of copper metality in the workmen, and tavor the view that the metaling the in in large part at least, to this metali.

had a the more of the solid of JUGEOWING MAILS.—The British Medical Journal says: Dr. Misi has need tennin for Journal says: Dr. Misi has need tennin for ingrowing nails, and does not find it necessary to enjoin reset, a concentrated southston—an onnee of fresh tennic acid dissolved in six dischms of pure water, with gentle heat—is used by painting the irritated soft parts twice a day. Two ceases recently had no pain or all lamoness after the first application, and went shour their work immediately, which they could not do before. The painting with the tould not do before. The painting with the formin is to be continued natil the nail has grown to its proper length and breadth. No other treatment was necessary.

Value or Lime-Water and Milk.—Medical and other professional men often press down from their insbility to keeps a regular time for meals. An eminent doctor says: "Being often out for meals have meals, and eminent doctor says: "Being often out for meary hours, and becoming too oxy basels, and seeks a full meal when at length able to get it, I conceived a plan which answered admirably adopted. I provided myself with a small bottle of lime-water, which I add to milk when the mixture in my pocket. A water biscouit the mixture in my pocket. A water biscouit the mixture in my pocket. A water biscouit they mill keep a man harmless on a long tast, and enable him to digest a meal when he can obtain it."

CREAM—ITS VALUE AND UES.—In an interceting article on cream, its value and ase, Prof.
Arnold of Cornell University says: The
superiority of cream over butter or any other
great mobility between its particles, premitting
in a liquid form, but in a condition allowing of
great mobility between its particles, permitting
fibe gastrio juice to mix with it in the most perstomath on the individual contains, thereby adding digestion.
Its behavior is quite different in this respect
from that of butter and other pure fasts. As
soon as they become melted they grease over
the other contents of the stomach, obstructing,
in a messure, the contact of gastrio juice, and
bindering, rather than hastening, the progress
of their digestion.
Value or Liner bastening, the progress
of their digestion.
Value or Liner-Water and Milke.—Medi-

TREATED !—The question of the hard of street and the hard of the hard hard of the hard of

PREVENTIVE MEDITIVE—ID. C. R. Illing vorth the medital Records.

PREVENTIVE MEDITIVE—ID. C. R. Illing vorth thus writes in the Mcd. Press. One of a course when the medital soperations is to not short its course when the course when the medital soops among that class discotders medital soops among that class of disorders medital soops are soops and the soops of the

kine same, together with "vehor machinesy not blear we seem states and general treases in the same, together with "vehor machinesy not blear machinesy have been observed, and it seems probable and Ireland, "5.74,321; Genmany, \$1.72,944; If the same way as does lead and other toxics, \$108,421; Enitiah Morth America, \$286,431; Machines Republic, \$115,661; Brand Morth America, \$286,439; Argentine Republic, \$115,661; Brand Morth America, \$331, our great sime as physicians is to prevent discondance, \$114,8225,1395; United States of Colombia, \$225,945; Argentine Republic, \$12,661; Brand Morth America, \$331, our great sime supported to their countries in South America, \$331, out for countries in South America, \$331, out for countries in South America, \$331, out for countries in South America, \$325,945; Affectine Republic, \$115,661; Brand Morth M

MINES AND PROSPECTS.—Esmersida Mesus: The mines and the prospects of this district were never mines and the prospects of this district were never with the mines and the prospects of this district were never in before monition in white seed sky's work the mines are company to me or tramway from the caretion of its mines. The company compensation of its important the district on the mountain-side and over in the flat in the distriction of their mill, for a stand over in the flat in the distriction of their mill, for a stand over in the flat in the distriction of their mill, for a stand over in the flat in the distriction of their mill, for a single stand over a mile and over the mill will be entired in the district of the district. There is considerable of a capacity and and the western mine and over the district of the district. There is considerable of a subject of the district in the stand base on the work. There are constantly donly good work. Bullion shipments are constantly on the mines in the classe of the configuration of the stand has one to occur and heavy of the stand has one of the stand has been said, its a stand in the properties of the underground over, the flat of the stand has been said, its a stand in the properties of the district of the stand has been said, its and the stand has been said, its and the stand has been said, its and many of mines in this section, seven the stand sear of the mines are pulpoyed on the said of the said of the said of seven the said of the said of seven in the late. The over a said of the mines are rapidly as the properties of the mines are rapidly as the properties of the mines in this district are some said with the showing made and the district are some said with the showing made and the district are some said of the mines are inspired ore. The other of the mines are the said of seven mines as rapidly as the said of the mines are the said of seven mines are the said of said of said of said of said with the showing and the said with the said of the said with the sa

MYE COUNTY MINES.—Courier, Aug. 13: During the properties of Mye county long the grade and a control of the county were worked at a gross yield of \$100.591.15; average per fon, \$51.50. Another large load of silver over the mines of the county were worked at a gross yield of \$100.591.15; average per fon, \$51.50. Another large load of silver over the bactelone mine at Spanish Belt was alipped to Salt Lake (Jiy on Thesday last Morris Bues, shipped them Sale of development is pushed with the said the work of development is pushed with the said the work of development is pushed with the said the work of development is pushed them with energy. On Wednesday last Morris Bues, with energy, On Wednesday last Morris Bues, which energy, On Wednesday last Worris Bues, which energy, On Wednesday last Worris Bues, it is also running on ores from the mines of Tybo dissaid the mines are looking the bullion. Austin Jacob. Son and Guesay Simonson, who keep themselves on and Guesay Simonson, who keep themselves of town and below Treasure Hill, have just made a full as hipment to Eureka Coin since two miles south of town ship employed at their mines to made a sea sersing of town free of \$65,73 per ton. Their first the search of the succept of the succe

Belmont District.

Aurora Dietrict.

Aurora Malker Lake Bulletin, August 12: There has not been fine for any noishle change in the condition of affairs at Aurora, but the situation of affairs at Aurora, but the situation condition of affairs at Aurora, but the situation camp. The ledge in the Durand is now somewhat camp. The ledge in the Durand is now somewhat larger than when last reported, and although not every of the miners. Mr. Colcord has begun developery on the United States of the miners will be appearance and come time must elapse of the miners. Mr. Colcord has begun developed on the Silver Laning work is progressing and appearances indicate that the company will soon restances a quantity of ore. The Antelope mine is being stages of the Month Cory is now down too feet, as a spearance in the Month Cory is now down too feet, is finely and profitably on the output. The Wells stadelity and profitably on the output. The Wells stadelity and profitably on the cutput. The Wells standber too effect to simil, The Wells in prests group or Mingo ore will be put through. Drawning the mine at Dawnin, in years gone by, yielded some bighe grand or the same kind of material has been struck and Richards & Calinan of material has been struck and Richards & Calinan of material has been struck and Richards & Calinan of material has been struck and Richards & Calinan of material has been struck and Richards & Calinan are now making a shipment of this ore.

Aurora District.

MEXICAN.—On the 1300 level from the end of the joint Mexican ground.

OPHIR.—On the 1300 level, winze Mo., I was sunk to feet; total depth, 74 feet.

UTAH.—On the 472 level, west crossout No. 4, 70 feet north of No. 3, was advanced so feet; total length, 84 feet. The face is in vein porphyry and clay.

UNION CONSOLIDATED.—The joint Union and Mexican drift, running northeasterly, reached the could line of the Union Consolidated and has been advanced as feet, total length in virgin ground, 56 feet.

SIERRA MEVADA.—On the 520 level, east cross-out No. 5, statied from the main north lateral drift supposite west crossout No. 9, was advanced ye feet; total length, 637 feet. The face is showing clay mixed with porphyry.

UNION CONSOLIDATED.—The joint Union and

GOULD AND CURRY.—On the 42S level the main Gould AND CURRY.—On the 42S level the was advanced do feet. On the 700 level the main south drift has been opened and imbered 40 feet; total length 36S feet. On the 800 level west total length, 144 feet. This crosscut is 150 north total length, 144 feet. This crosscut is 150 north 100.

HEST AND BELCHER,—On the 800 level, at a point in west crossout No. 4, 550 feet from the main north in west crossout No. 4, 550 feet from the main north total length, at 5 feet. The face is in quartz, giving low assays. On the 1300 level the north drift was extended so feet, total length, 626 feet. The formstone is say and porphyry.

GOULD AND CURRY.—On the 425 fevel the main

level the south drift from the same winze was ad-vanced to seet, total length, 50 feet. In the lower tunnel upraise Wo, 2 was extended 12 feet; total bight, 307 feet.

Garneld District.

MINING BUMMARY.

The following is mostly condensed from fournals published in the intention of in proximity to the mines mentioned.

CALIFORNIA.

MINING MOTES.—Prospect, Aug. 12: Mining matters are lively about Plymouth. The mines and mining interest is and far in the relighborhood of West Point, after having lain in a dormant and neglected condition for several years, owing to the inability of mine-owners to condition for several years, owing to the inability of ment in them would be safe, and serve to prove remonerative, have at last taken a start in the right direction.

munerative, have at last taken a start in the right direction.

Barxing Strak, Ekstern Boundary.—The being actively worked; the falter makes are all being actively worked; the latter makes regular slipped to worked; the latter makes in the slipped to worked; the latter state in this district state in more transfer and worked; the latter slipped to worked; the protect of worked; the protect is slipped to Salop & Co., Vallejo Junction, for treatment. The average value of the practice of the latter of the work is slipped to slipped to the converting of the reach of the man is employed at this work, and the latter of the man is employed at this work, and the latter slipped to two too proper pyripped at the seconing process.

Only one man is employed at this work, and the latter slipped to two too proper pyripped at the work, and the bet treated, which yields from 7 to 14 per cent of the man is employed at the work, and the product is from 300 to 20,000 tons to tree to be treated, which yields from 7 to 14 per cent of the man is employed at the work, and the present rate of treatment. It is likely, however, breath and work and work and the present rate of treatment. It is likely, however, should any one plies as ematerially reduced. The property is one plies are materially reduced. The working the surface of the until ferson, working the fore until in it claimed with far britter results.

MI) Dorado.

QUARITA-MILLE,—Olsever, Aug., 13: The ten-

El Dorado.

DIOPERGY. Aug. 13: The tension and normal and normal and normal at the Superior mine, two miles and a stamp mill at the Superior mine, two miles and a stamp mill at the Superior mine, two miles and a fact south from Placeterille, Fater Goge, entendent, was started up yesterday, Harry Edge, enter a fact and it is producing some fine ore under the management, During the week the ten its new management, During the week the ten management, During the samil stamps at the Grand Victory mill, near Diamond Springs, have been removed, tearing the mond Springs, have been removed, tearing the sum of the stamps of the crushing the stamps of the stamps of the crushing to yet the sum of the stamps of the st

GOLD IN BOX SPRING MOUNTAIN,—Press, Aug.

GOLD IN BOX SPRING MOUNTAIN,—Press, Aug.

73. Quartz assaying freely in gold has been
in the fown of Colon and veinity and leading to
the cown of Colon and veinity and leading to
the cown of Colon and veinity and leading to
the cown of Colon and veinity and leading to
the formation of a mining district at the place. The
teefle, who has been and the author of the countaints
width is about 1x inches, At a depth of nine
teet the width is about 1x inches, and an enties ally accessible, It true and the cree grows
width is about 1x inches, and an entieverty clearly defined upon the aurface, where its
width is about 1x inches, and an enbetter as the ledge goes down. This claim is jnst
above the Cage canal, a short distance northeast of
above the Cage canal, a short distance northeast of
above the Cage canal, a short distance northeast of
the present indications show, it will be a very
valuable acquisition, in will be a very

San Bernardino.

GOLD STRING.—It is rumored that Geo. Standart is preparing to resume work on the Gold Stripe is preparing to resume work on the Gold Stripe. At one time the Gold Stripe paid flargely. Over At one time the Gold Stripe paid stagely. Over Shoo, one time the Gold Stripe paid stagely. Over Shoo, one time the Gold Stripe paid stagely one time the Gold Stripe and state on the stagely would have a Shoonaxe, and the community would reap the benefits a straing from the employment of a large number of bands.

Pumber.

Particular ingul hand has yet lorgol the cunning.

Spanish Ranch.—Mational, Aug. 13: The Edman and the Halstead quartz mines are coming to the front. There are other mines of lesser may not the front. There are other mines of lesser may and considerable prospecting is also being done. McCowan on Cap hill is now running a tunnel to positive the cap the lege at a considerable positive to the rich depublish worked there in early days. The prospects obtained in a shall be abad. On the rich depublish of the rich depublished to the r

every respect.

Good Result,—Herad, Aug. 13: Two bunders are defined and seven pounds of one from the Eclipse dred and seven pounds of one from the Eclipse mine, near lows thill, Placer county, owned by J. B. Hobson and others, was reduced at the metallur. B. Hobson and others, was reduced at the metallur. B. Hobson and others, was reduced at the metallur like one was run through the Kendell one-stamp fielded to acted the fast week. The cessang pated, copper plates attached to catch the fine gold. The cleanup yielded 49.15 ounces of gold, which mill, No. o. Screen used was a No. 60 silverplated, copper plates attached to catch the fine gold. When the constant \$5.50 or liverplated at \$5.50 or liverplated at \$5.50 or liverplated at \$5.50 or liverplated at \$6.50 or live prospect in that vicinity which finil knew of so contain \$5.50 or liverplated at \$6.50 or li

MAY EQUAL THE DELHI.—North San Juan MAY EQUAL THE DELHI.—North San Juan Times, Aug. 13: A. S. Bigelow of Columbia Hill mass located a quart cainin on the Middle Yuba river, a few hundred feet below the Delhi. Free gold in abundance is found in the croppings, and great hopes are entertained that it may equal the Delhi in every respect.

THE BRUNSWICK MINE.—The three-compartment shaft of the Brunswick claim in Grass Valley ment shaft of the Brunswick claim in Grass Valley the base been sunk about to feet to where it encounters the upraise from the drain tunnel, and obtains a works, Bupt. Thiely says some rich ore was found. A six-foot Pelton wheel with which to run the hoist-mig and pumping rig has been contracted for. The waster to be used on the wheel will have a fall of 800 feet.

IDAO.

LOW WATER.—Independent, Aug. 16: The water is unusually low this season in the river, and
ter is unusually low this season in the river, and
measures have been taken by the cowners of the various ditches to raise the water to their level. During
the week the Bishop Creek ditch supply has been
increased by a dam at the head, and the Dell and
folling ditches to raise have also been similarly treated.
Collins ditches have also been similarly treated,
trouble being to get it into the tiver, the only
whitchell and Jack Lavalle are taking out rich gold
ore from the Hope Mine, at Chrysopolis. It it holds
ore from the Hope Mine, at Chrysopolis. It it holds
out they have a good thing.
Lasasan.
Lasasen.

best Riverside, and should it prove to be savaluable acquered, and should it prove to be savaluable as the present indications show, it will be a very valuable acquisition.

JULIAN DISTRICT.—Sentinel, Aug. 12: The JULIAN DISTRICT.—Sentinel is probable merit.

JULIAN DISTRICT.—Sentinel, Aug. 12: The JULIAN DISTRICT.—As a considerable merit.

JULIAN DISTRICT.—As a considerable merit.

JULIAN DISTRICT.—As a considerable merit.

JULIAN DISTRICT.—A fabrilous wealth has been one of which produced the famous piece of quarts.

JULIAN DISTRICT.—A fabrilous wealth has been been one of wealth has been one of which produced the fabrilance.

JULIAN DISTRICT.—A fabrilous wealth has been of out foundation of merit and the considerable within a few feet of the old shaft. On the strength of this strike the office of a shaft.

JULIAN DISTRICT.—A fabrilous wealth has been of the old shaft. On the strength of this strike the office with the operated and is now turning were some way by which the cost of crushing could mines here whose prospects are just as savorable of the operators would be quite sure of the operators would be quite sure of the consult of the propulation of machinery, where through a strike the cost that the operators would be quite sure of the propulation of machinery, where through a sard, and the operators would a suffice to drive a large number of stamps, or reduction the propulation of machinery, where through one machinery, where the would suffice in the done of the said with profit, out the cast quantities in the district, could be mined and milled with profit, out the said was quantities in the district, could be district, and with the district of the propulation of machinery with the could be sard milled with profit, out the said quantities in the district, could be district, out with the could with the said

Doub have a good thing.

Gold have a good thing.

Gold have leaved the server of the s

it. The hoising works will be run by an eight-foot Pelton wheel, with a pressure of tro feet. The mill will be commenced this week, and be completed in the months. Twelve or fifteen men will be employed in the mine within a few days. The Mounthouse of the street mine within a few days. The Mounthouse is looking well, and employing about the role is so work progresses. A crushing of lowner of the same work progresses. A crushing of lowner commence to-day. The sub-fessees of the Peabody have mence to-day. The sub-fessees of the Peabody have men to the sub-fine sub-fessees of the peabody have men to the sub-fessees of the peabody have men to the peabody have a something over 50 per loads of the peabody have sub-fessees of the peabody have a something over 50 per loads of the peabody have a something over 50 per loads of the peabody have a something over 50 per loads of the peabody have a something over 50 per loads of the peabody have a something over 50 per loads of the peabody have been sub-feet and the peabody MINING AND SCIENTIFIC PRESS.

SOUND CREEK.—The Reilly Black Bear mine in his district is a genuine bonanza. The ledge is rated wellth can and quartz, free gold and sulphruser. The Conant mine is also a great fortune, and its wealth can scarcely be estimated. Squaw Creek and Backbone will yet astonish the mining world.

Sierra.

Sonoma.

Sonoma.

Sonoma.

Gravities all Christians, Aug. 13: The quarties at Aqua Caliente, after many delays, are now in operation, and as soon as the wagon-roads can be completed a large force of men will be placed at work.

Mr. H. C. Manuel last month, in prospecting for basalt rock, discovered on the premises of Mr. M. K. Cady a well-defined ledge of granite; and should this prospect develop, as he believes it may, it will prove of much importance to this locality.

Dienge, Alexan, Aug., Au

and mine are in good condition. A large number of men are given constant employment, and things general are running smooth on the guloh. From the Central mine at Old Diggings they are shipping three earloads of ore weekly to the Renurs. One which were carboads of ore weekly to the Renurs. One which formerly yielded only \$z pert ton at their mill goes as formerly yielded only \$z pert ton at their mill goes as been that the fine gold would not amalgamete and been that the fine gold would not amalgamete and gold would only an are sight to be the standard of the first of the fore gold would only an algebt to Reno.

Manne person of reserve the control of the control

MEVADA.

DEADWOOD,—Journal, Aug. 13; A crushing of Trinity.

Ty cons of ore from the Boston mine severged 4xx per fore. The vein averages 14 inches and prospects fore. The vein averages 14 inches and prospects which is turning 15 stamps and employing 40 mile is turning in 1890.

Mow there are more than a dozen mile running in 1890, and the county, the quartz mines yielding more than twice as much as the placers. There are about 400 mile and ever the placers. There are about 400 mile and ever the and two stamps in 1890, and 18 mile and ever that are stamp in 1800 mile guile. At Bullychoop a to-stamp mill 18 in operation, and at New River, which is going the same and ever two stamps mills and ever the influence are being worked toon and at New River, which is going the same and the same and the same in 1800 mile and working their gravel claim on Oregon mountain by for the amount of water they have been able to use. This ground yield large quantities of goid at an enominal profit.

Trinity.

this prospect develop, as the believes it may, it will myove of much importance to this locality.

Tuoluna.

Tuoluna.

Tuoluna.

Mining ITEMS.—Independent, Aug. 13: Messrs. blogene Day & Hull have a good prospect out near the John Cook place. Mr. Day digs the rock out fast and packs it on his back to the restance milk, which MM. Hull tune by hand-power. By this primitive may be a state of the restance of the process they realize \$\$x\$ 11.00 to the restance of the process they realize \$\$x\$ 11.00 to the restance of the rest

ORBGON.

PINE CREEK,—Sontinel, Aug. 14; At Corntoopie E. P. Torrey to trathed in his 5-stamp mill to
toop or from the Companion mire, which yieldtons of ore from the Companion mire, which yieldtons of ore every 24 hours, and is saving the precious
to state of the componion ore. Mr. Torrey is perious
action of the example of the Companion dump and
the same grade ore on the Companion dump and
the same grade ore on the Companion dump and
benty more in sight. The Whitman mine is looking fine, and at a depth of 300 feet the ore vein is
not fine any following as well as ever and is expected
to develop into one of the great properties of the
camp. The extension of the Way Up has been
to develop into one of the great properties of the
is already in sight and increasing in width as depth
is already in sight and increasing in width as depth
is already in sight and increasing in width as depth
to develop into one of the great properties of the
is already in sight and increasing in width as depth
is already in sight and increasing to width as depth
to become a great in a different secons
in the become a great in the various companies are
the united to become a great in the various companies are
the work.

In the that is a second in the companies are
to boom, but has readily improved and developed
on the solid merries of she mines, until now as bright
future is assured ber.

TAAH.

HATU

In the property of the processory of the property is being worked with the greatest vigor, in factloping the greatest vigor, in factloping to the secretary of this company to years. The fector is and around the mine numbers 360 men and foce in and stound the mine numbers 360 men and foce in and around the mine numbers 360 men and foce of the state pave sweeked this exason. A great smooth of the mine and stoping out ore is being done in the mine and stoping out ore is being actively pushed. At this amount of imperating is being done and the mine is the precision of the mine and stoping out ore is being actively pushed. At this part of the season very little deadwork is being part of the season very little deadwork is being fore and the mine and state the being part of the season very little deadwork is being part of the season very little deadwork is being the level but whether the sinking will be pushed from the feel of the Another being with the North Counties of the Another properties at great with the Contribution and attack and other properties at turner production and a season of the Another properties at great production and the season wery production and the season of the feel of the Another mine, and John J. Baly, production has but just begin and also season of the dead of the d

NEM MEXICO.

MONTANA.

GENERAL MOTES.—Daily Inter-Mountain, Aug.

13. John Muray, who is working placer diggings cessful season. Not long 826 be made one cleaning on Indian creek, Mackpier county, is having a successful season, and to long 826 be made one cleaning output of his mines for the whole season will not be less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the like what it is interded for. Large quantities of the new meditures it is national at a depth of 126 feet the interest in the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from the less than \$50,000. At a depth of 125 feet from \$50,000. Blackloot road, and have unearloed some tine one in that district.

ALDER CREEK.—The Ferris Bross, are pushing work on the Mammohi mine, and have a force of the district.

ALDER CREEK.—The Ferris Bross, are pushing mechanics and earload mine, and have a force of mechanics and earload mine, and the begin mechanics and earload mine, and the begin mechanics and earload and the district is one of bounding prescribelly unlimited and the district is one of bounding prescribelly unlimited and the district is one of bounding prescribelly unlimited and the district is one of bounding of a rew possibilities. The old, nearly abandoned camp of a new good and unliming along the buy footh. A series and the district is one of bounding of a rew good and unliming along the Dry Fork. A series to the district in the way of mining along the Dry Fork. A series to the the set of them have ore one of a new good of or an in the best of the moore condwood contract. Bannock Company is still running the mill to its full broad and will not receive any more cordwood capter, and has bonded the wood contract. Bannock Company is still running the mill to its full probable that they will not receive any more cordwood company is still running the mill to its full probable that they will not receive any more cordwood contact. They have theirly notified the wood contract and the bullion yield is add to be fastly wood chase, and the bullion yield is also to be fastly purnorable that they will not receive any more cordwood chase, and the bullion yield is also to be fastly mine which was thurst. There is and to be chastly promises are our of employment. There is add to be used to be fastly mine, and the bullion will also the bas been found northeast from Houston. This locality promises are on the condition of monthly dividends within 60 days. The capture of the mill will be declaration of monthly dividends within 60 days.

depend to the control of the control

The ledges bere are large and numericus, and we believe inte district will yet be responsible for a future boom in Chicus. The ledges bere are large and numericus, and we future boom in Chicus. The Merimace is a large and the property of the destinate of the control of the destinate of the control of the

YULE CREEK.—Elk Mountain Pilot, Aug. 13:

The Vule Creek country is coming to the front in a manner never before heard of. Aside from the fact that it is all being tkern up for marble, new sand that it is all being tkern up for marble, new sand that it is all being tkern up for marble, new sand that it is all being tkern up for work has been to be all the time. The richest method as severy little work as been done on any of the properties it is hard to tell how when the contact is cut. Three or four weeks ago disting that the contact is cut. Three or four weeks ago ing on Yule creek, about 5 miles from the bead ling on Yule creek, about 5 miles from the bead ing on Yule creek, about 5 miles from the bead side in the bead seaton on a big gleene autrop in the bead seaton on a big gleene autrop in the bead side in the bead side on the adjoining the immense marble ledges, if we work soon opened up a breast of mincron at the action of the action of the assay them it tun 150 ounces silver and about 50 per cent lead.

COLORADO.

BRITISH COLUMBIA.

A IO-STANY MILL, is being wreated at a mine about two more of a deadow. Lake blick as a mine about two miles from the town, the owners of which claim to have discovered a process whereby free can concurred to the cost over into builton, and leave a margin above the cost ore into builton, and leave a margin above the cost ore into builton, and leave a margin above the cost or ded by the slow process of transporting by teams of production. The completion of the mill is remained to the construction, which is faulted to an entertune of the mill will will early a steep grade. It is probable the mill will will be in operation before snow falls. If the test is satisfactory, the old camp will be rapidly filled up with processing who, in anticipation that the ore can be successfully treated, have located acres of ground on the mineral lost.

Old Meadow Lake District. mine, assays from which go 590 per ton silver and 15 in gold. The mine is 18 miles north of Haw-thome.

properties.
Steamboat District.

ATGADURE DISTRICT.

AT GALENA.—Reno Greadle, Aug. 14: The Pittsburg Reduction Works, located at Galens, et al. Galens and the pathurg, Goodsins and consolidated Pittmass mines, and they have enough at the rate of 100 tons per day for the next seven months without regard to what is being mined at present. The Maryaville Company is shipping ore to the Reno Reduction Works, The ore serving working with good results. One first-class sample ore shipped to Salt Lake City yielded in silver 1000 ores, good, 36 ounces, Good, 36 ounces, Good, 36 ounces, Good, 36 ounces, Sood, 36 ounces, Good, 36 ounces, Sood, 36 ounces, Good, 36 oun

## Pitteburg District.

ROCK CREEK MINES.—Spokene Chronicle, Aug. 5. This gold field, which hies about 60 miles northerest from the Salmon River mines in Washington and the conting the seaf from the Salmon River mines in Washington Territory, is becoming more prominent every day who accompanied by Mr. Upton is interested by the Ambo accompanied Phintam. The Amelia is one with the Amelia with Mr. Burnham. The Amelia is one which the Amelia with Mr. Burnham. The Amelia is one with the Ago or nore locations about five miles from the Mr. Upton its interested in the Amelia with Mr. Burnham. The Amelia is one of them is down 40 feet and a fire which the Amelia is one of them is down 40 feet and a fire which the peet being sunk. One of them is down 40 feet and a fire such a fire body of ore, A 30-foot crosscut has been made on the other 12 foot shells and no forwall is refounded. The autistice cropating at and and she will free four the other 12 foot and are averaging \$50 per four the other 12 foot shell and no forwall in the four 12 foot shell and no forwall in sultant the angel of the will the other 12 foot shell and no forwall in the four 12 foot shell and no forwall in the other 12 foot shell and no forwall in sultant the foot of the shell and no forwall in the foot of the shell and the shell and

WILLOW CREEK.—Territorial Enterprise, Aug.

15. The mill at the Willow Creek mine has just a started up. The four true concentrators in use there as earned as a full work. The ore, which contains are doing excellent work. The ore which contains alveit, gold and galena, is crushed by a five-stamp salveity, gold and galena, is crushed by a five-stamp salveity, The concentrates will be sent to the Keno teduction works. The mill stands within too feet reduction works. The mill stands within too feet of the Willow Willow Reservation of the Wippins & Truckee railroad track. The lost of the Willow of the mill. Mr. Washoff his within 300 feet of the mill. Mr. Washoff his within 300 feet of the mill. There is an upraise from the turnel through the vein, and a great amount of ore has been opened up ready for a great amount of ore has been opened up ready for a great amount of ore has been opened up ready for a great amount of ore has been opened up ready for a full of the will have been start means business.

Tuserorra District.

The concerne Districts of the state of the s

SALMON KIVEE MINES.—Spokane Chronicle, huge, e.g. for the definition of definition of the definition o

## WASHINGTON.

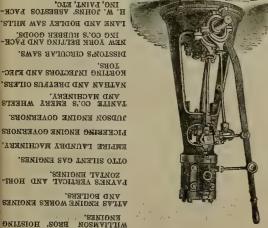
## GREGORY &

San Francisco, Cal.

Cor. Fremont and Mission Sts., 👙 - 🦟 -

MACHINERY

SOLE AGENTS FOR



BLAKE'S INPROVED STEAM SICKLOUD, S LOMER DRIFTS. BEMEUT & SOU'S MACHINISTS TOOLS, PRANK & CO.'S WOODWORKING

VEBBER CENTRIFUGAL PUMPS.

STURTEYANT BLOWERS AND

BEADLEY CUSHIONED HAMMERS TURBINE WATER WHEELS. SHIMER MATCHER HEADS.

MASSEY'S STEAM HAMMERS. SCHLEUKER'S BOLT CUTTERS. HOLLOWAY FIRE EXTINGUISH. ERS.

YACHT ENGINES.

## ENCINES SUG BOILERS

FROM 2 TO 100 H. P., ALWAYS IN STOCK

OIF2: SUPPLIES AND LUBRICATING

NEM YORK.

### MOBKS IBON

M. W. Corner Main and Howard Sts., San Francisco,

and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES, CASTINGS AND FORGINGS OF EVETY DESCRIPTION

IMPROVED PORTABLE HOISTING ENGINES. ALL WORK TESTED AND GUARANTEED.

NATIONAL ROCKER QUARTZ MILL.

KENDALL'S PATENT, AUGUST 24, 1886.

MARSHUTZ & CANTRELL, Sole Manufacturers. CAPACITY, 12 Tons in 24 Hours, 3 H. P.

this improved eystem of milling and smalgenrating ores in the fol-lowing particulars:

1. The cost is less than one-half of the came cost is less than a farming of same especity.
2. The (religible to mine is less than 0.00-half of stamps.
3. The cost of evecting is less than 0.00-fourth of stamps.
4. The power to diving liss less than 0.00-fourth of stamps.
5. The west is less than one-querter of stamps.
6. There is no west except on stamps.
7. In point of a margenantion it is successed and dies.
7. In point of amagenantion it is used.
8. In its stamps.
9. In use, 1. In use,

We challenge competition with Stamps, Ball Fulverizers or any other ore crushing machines now

MARSHUTZ & CANTRELL.

IRON CASTINGS of all descriptions. CHILLED CAR MHEELS

MEDAL, AWARDED, MECHANICS' FAIR. AND RAILROAD CASTINGS.

Send for Circulars and Price List.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. STEIGER & KERR

DEWEY & CO., [Wo. 260 MARKET ST.] PATENT AGENTS.

Montene, Wyoming, Utah and Arizone. Lighteet, Strongest, Ohespeet and
Beet Balanced Pulsy in the World. Also Manufacturers of
SHAFTING, HANGERS AND APPURTENANCES

Affiles the Strong of Circultae Any Paige Lier. To

Medart Patent Wronght Rim Pulley

Sacramento Founday. Corr. M and Front Sta Arckanento fon this mill will be prescuted to the full ex-tent of the law.

Tortalle and the political Distraction of the political Distraction of the political Distraction of the political Distraction of the political direct. Works Ore at Low Cost of the applied direct. Works Ore at Cestred.

More of less weight on Chushers as desired.

Very little friction. Beats other mechices in reducing and manigramething one, and costs less. All who have need this mill manigrament of highly. Splendid for low-grade on a cocount of the commend of highly. Splendid for low-grade on a cocount of low cost of working.

WM. GUTENBERGER.

Journal of More of the costs of working of the company of the cost of working.

WM. GUTENBERGER.

Crush 8 to 10 Tons per Day.



114 to 118 Pine St,

The most perfect appliance for people sugreged in Sansiting, Dry Crushing, Gnano Works, Onlocksliver, Dry Crushing, Gnano Workshiver, Dry Crushing, and slightly Threshings and slightly and Stock-drylng, and slightly are indisponents ble, as no foreign aubstances on the intaked when there were work, they are indisponents ble, as no foreign aubstances on the intaked when they are worth.

The Resputedrate ser worth and they are worth and in not sensitionly they proceed a process on tecepte of price. Sent of support of the strainfeatory the process on receipt of price. Address on mannicatious and orders to and orders to the support of the support

and Salivation.

Entirely Prevents Lead Poisoning

LIFE-SAVING RESPIRATOR

Office, 145 Broadway, cor. Liberty St.,





**DIENBERGER'S ROLLER ORE CRUSHER** 

HOOKER & LAWRENCE, Gen'l Agents.

THE FRISBEE-LUCOP MILL CO.,

Any method of smalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh dry, and from 3000 to 6000 pounds Wet.

All wearing parts easily and cheaply replaced. May be seen in operation at the New York Metallurgical Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, furnished on application.

ness in a rapid and economical manner.

other Mineral Substance to any degree of fine-

Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

EEISBEE-LUCOP

San Francisco.

## Metallurgy and Ores.

## SMELTING and LEAD CO. SETBA

416 Montgomery St., San Francisco.

And Assay Office, COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

ENGINES, BLUESTONE, LEAD PIPE,

SHOT, Etc., Etc. SHEET LEAD,

Standard Shot-Gun Cartridges,

Under Chamberlin Patent.

## JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GIPSSMYKE VND SNNDRIES' ELC CHEMICYF YBBYKYLDS VND CHEMICYFS'

II4-II8 Fine Street, - San Franc We would call the attention of Assayers, Che Mining Companies, Milling Companies, Prospectors to our tuli stock of Balances, Furnaces, Mindies, oles, Scoriders, etc., including, also, a full sto Demicals. San Francisco,

been engaged in turnishing these supplies sin t discovery of mines on the Facilio Coast, we it to from our experience we can well whit the of it these goods, both as to qualify and price. O lustrated Catalogue, with prices, will be sent.

JOHN TAYLOR & GO.

## Nevada Metallurgical Works,

NO. 28 STEVENSON STREET,

Mear First and Market Streets, S. F.

Ores worked by any Process.

Ores Sampled.
Assaying in all its Branches, Waters, etc.
Assaying in all its Branches, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications turnished for the most suitable Process for Working Ores.
Special attention paid to Examinations o Mines; Plans and Reports turnished.

Mines; Plans and Reports furnished.

O. A. LUOKHARDT & OO.,
(Formerly Hubn & Luckbardt,)

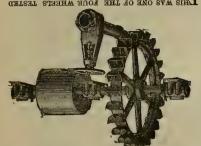
Mining Engineers and Metallurgiets.

818 Pine St. (Basement., METALLURGICAL WORKS,

orner of Leidesdorff Street, - . SAN FRANCISCO

yesylug and Analyzis of Ores, Minerals and Wateret. inces Examined and Reported on. Treating Ores by im od processes.

PELTON'S WATER WHEEL,



INVENTORS, TAKE NOTICE!

L. PETERSON, MODEL MAKER,
Experimental machinery and all kinds of metal, tin,
Experimental machinery and all kinds of metal, tin,
copper and brass.

QUARTZ MILL. Hantington Centrifugal

AT SEND FOR CATALOGUE TO

TRAMWAYS.

MIKE ROPE

HALLIDIE'S

BNITZIOH

IICS and TROMMELS. CORNISH BOLLS,

FRASER & CHALMERS,

ENCINES AND BOILERS.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

ing smelting works This Mill as a Crusher and Pul-verieer is without rival.

Je in operation in lead-

STURTEVANT MILL.

**BOMPING** 

ENCINEZ

MACHINERY,

CORNISH

'Samna

GENERAL OFFICE AND WORKS: Fulton and Union Streets, Obioago, III.

NEW YORK OFFICE:

ROOM 48, No. 2 Well Street.

UTAH OFFICE-SALT LAKE OITY, UTAH



## PARKE & LACY, General Agents, San Francisco, Cal. Ohio, or 110 Liberty St., New York. TRASER & CHALMERS, General Agents. Chicago, Ill., and Denver, Col.

## COLD MINERS

Quartz, Gravel and Placer Mines!

**SMITAMASJAMA** Silver-Plated

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL PROCESS KNOWN FOR SAVING GOLD.

653 and 655 MISSION ST., SAN FRANCISCO, CAL.
E. G. DENNISTON, Proprietor.

Fifteen Medals Awarded.

JAMES LEFFEL & CO.,

JAMES LEFFEL'S

MEXICO OFFICE: No. 11 Oslie de Justez, Obibushus, Mexico.

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

San Francisco Gold, Silver & Nickel Plating Works, These Plates can also be purchased of 10HN TAYLOR & CO., Dealers in Assayers' and Mining Material, 112 to 118 Pine Street.

## THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

> ETC., ETC. ASSAYERS, CHEMISTS, MINERALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

ATOUR Catalogue of Practical and Scientific Books, 98 pages, 8vo., and our other Catalogues and circulars, the whole covering every branch of Science applied to the Arts, sent free of postage, to any one in any part of the world who will furnish his address.

HENRY CAREY BAIRD & CO.,

Industrial Publishers, Booksellers, and Importers,

810 Walnut St., Philadelphis, Pa., U. S. A.

## WINING SHAREHOLDERS' DIRECTORY,

List of U. S. Patents for Pacific Cosst

Reported by Dewey & Co., Ploneer Patent Solicitors for Pacific States.

FOR WEEK ENDING AUGUST 9, 1887. From the official report of U. S. Patente in Dawn't & Co.'s Patent Office Library, 250 Market St., S. F.

367,965.—BRAKE—Henry Dewey, Plainsburg, f65,074. — ВАLIИG РRESS—Т. J. Corning, San 368,130.—MAGAZINE GUM—Howard Carr, S. F. 367,786.—Pipe Wrench—E. O. Carvin, Corval-

367,919. — CENTRIFUGAL PUMP—I, P. Lambing,

388,009.—Beam Connection—Sims & Morris, S. F.

Nova.—Copies of U. S. and Foreign patents turnlaned 'Dewye's Co, in the stortess full possession of the Stephen's content, American and Foreign patents between the and general patent business for Facific Cos stephen's and general patent business for Facific Cos stephen's transacted with perfect security, at reasonable test, and in the shortest possible time. t., 297,938. — Purifying Beverages—Somps & 'eise, S. F. 368,177. —Shindle-Shaping Machine—A. T. 368,178. —Device for Cutting Vehicle Axles 368,178. —Device for Cutting Vehicle Axles O. Whimore, Oskifand, Cal.

### Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Southwritte Press U. S. and Foreign Patent Agency, the following are workhy of special mention:

Macazing Guy.—Howard Carr, S. F., as-

aguor to the vinchester Acepaching Anna Co. 363,130. Dated Aug. 9, 1887. The invention in this gun consists mainly in the carrier by which the carrier is accompanient of the gun. This carrier is so constructed the parties are craneferred from the magazine to the gun. This carrier is accomstructed that carrier is accompanient. The improvement may be used in the gun without obsarge of any portion of the mechanism. The improvement may be used in the gun without obsarge of any portion of the guns of any description, and while carbridges of various lengths may be used in the same carrier-block and loading mechanism the same carrier-block and loading mechanism are employed. signor to the Winchester Repeating Arms Co.

Jamenne, Jone, Ust. No. 367, 1918. Dated Ang. 9, 1887, This system comprises a number of centrifugal pumps arranged in verticeal series, and devices in connection therewith, such as a peculiar construction of the pumps themselves and a novel vertical system. The patentied by this same inventor, as in the prefectly practical system. The will present a perfectly practical system. The object of the invention is the provision of a wisten whereby waster may be raised to say high, either from the bottom of a deep well or the shaft of a mine, or to the top of a suitable the construction of a mine, or to the top of a suitable waster works. CENTRIFUCAL PUMP SYSTEM. — Isaac P. Lambing, Ione, Cal. No. 367,918, Dated Aug.

Puritying and Preserving Beverances, S. F., Comps and Frederick A. Weise, S. F., Cal. No. 367,938. Dated A. Weise, 9, 1887. The object of this invention is to preserve such beverages as are likely to degenerate during the beverages of their of their use, by reserve into which the vessel, into which the beverage of the superestrainty and especially of lager, which raptures of beer, and especially of lager, which raptures of the space left, by drawing off the filling ton preserving the bestoner once tapped. The means of the vessel, with a foam-generating company of the company of the space of the sir is excluded.

Brake.—Henry Dewey, Plainsburg, assignor to Daniel Best of San Leandro, Cal. No. 367, to Daniel Best of San Leandro, Cal. No. 367, PURIFYING AND PRESERVING BEYERAGES.

965. Dated Aug. 9, 1887. This brake is parbefor and breachers. In those macohines it has
ere and breachers. In those macohines it has
been necessary to employ large teams of suimals
occurs in such a team it is impossible for the
driver to control them. But the powerful
driver to control them are the driver to so
control the team. It is applied to the main
driving-wheel of the machine, the strape
states of the frame of the machine, the strape
states of the frame of the machine, the strape
states of the frame of the machine, the strape
with the frame of the machine, the strape
states of the frame of the machine, the strape
states of the frame of the machine, the strape
states of the frame of the machine, the strape
states of the frame of the machine, the strape
states of the frame of the machine, the strape
states of the frame which are operated by the
driver. to Daniel Best of San Leandro, Cal. No. 367,-965. Dated Aug. 9, 1887. This brake is par-

The object of this invention is to provide a centrifugal pump in which there as no friction on the outer rim of the driver, and whose operation and power are purely centrifugal. It consists of an outer annular hollow receiving OENTEIFUGEL PUMP. —Isaac P. Lambing, Ione, Cal. No. 367,919. Dated Aug. 9, 1887.

> California, A Judson. 329 Gonsome St. Annual. California, A Judson. 320 Gansome St. Annual. California, A Judson. 320 Gansome St. Annual. California, A Judson. 321 Sansome St. Special. California, A Judson. 321 Sansome St. Special. Special. Multington. 309 California St. Special. Special. Multington. 309 California St. Special. Special. Multington. 309 California St. Special. Sp MAME OF COMPANY.
> Aleske M Co.
> Arnold G & S M Co.
> Strub Creek G M & M Co.
> Strub Creek G M & M Co.
> Strub Creek G M Co. | According to the property of Acade mode and a Conflict means of the confl MEETINGS TO BE HELD.

## S. F. Stock Exchange. Table of Lowest and Highest Sales in

2.5		120	00	34	23	UB	03	sital.	
94"	••••	06		02.E	00'1	1,30	00°1	Low BWOL	1
		08.					****	radependence	
2,00	****			00.2		00.2	****	Holmes	
09.8	00*9	92.6	UI.1	67.75	08.4		06.4	Hale & Morerosa	Bu
₽g	06'E	98.8	00,0	28	87.1		60.4	Gould & Curry	
		20.5	90.5	04.	44.7		20.1	Grand Prize	
CC * T	CE'T	39.I	07°T	35,I	0711	1.50	CT'T	Exchequer	
36.1	31	00-7			=0	na r	91 L	Tatthadarid	
		00.4	ð7., 8			3,15		Ептекв Соп	
		1				G1. F		East B. & B	_
		000				02.		Dudley	6
		gg.	09*	03.			<b>99°</b>	Central	
00.I	06.	00.1	06,	00 T		62.I	28.	Crocker	7
46	₹6	TOT	00.8	FOE	8.25	343	22.7	Orown Point	-
02,	GI.	02.	ăi.	03°	GI.	02°		Con. Pacine	09
09*	99*		****	ç9°	ĜĜ.	02*	09*	Caledonia	çç
S 25	****	04.2	97.2	3.00		2,75		Con, Imperial,,,,,	71
7.25	****	82.7		09.7		8.25	97 4	Солиденсе	
05.8		09.9	82.8			06.7	0.2.0	Опоцыт	9
	00.0	104.5	30 4	10	V3 3	03.4	30.0	Champion	9
2,15	01.2			02.2	OX * P	3,10	95°Z	Ohallenge	
181	FAT	₹61	₩8E					Annellad().	97
OLL				96T	£4I		FAT	Con. Va. & Cal	
OFF	06	I IE	đ8,	06"		96"	06;	Bulwer	
0010								Bodie Tunnel	-
2,90		2,00		36.E		2,40	68.I	Benton	
2,00		00,2		2.20		09.2	3,00	Bodie Con	09
1,00		1,20	31,15		01.1	38, I	Of, I	Reme tale	-
7.25	ZI.I	08.E	1.20		OT.I	32.I	Of I	ISSAUMOTE,	ž
06°T	06.1		08°T	01.2	96°T	29.2	08.1	Bullion	-
29	89	97. 7	69	#9	00.9	00.7	80	TRACE OF TRACTOR STREET	
čč.		OF.	98"	121.	****	****	<del>8</del> 9	Вторру	00
21.7	29	67.7	98*9	00.6	62,8	80	00.0	Велович	00
.30	çã.	98.	20.0	0.4		UP,	09.5	Argenta	09
T.35	1.15		1.35		27°E		92°T	atropy A	00
08.2	2,10		01.2		36 F	1 50			_13
ge°₹	4,25		UL 0	20 0	2.10	UP G		A.15a	134
4 2E	46 F	46 P		4, 40	62.4	44 7	3.50		-
									13
	0								
	Su.A.		2uA	7 "	gu V		մու	COMPANY,	C
	END		END	DNI	END		KND		8
HH:	H.VA	EE	ME	EK	ME	EE	AA.	I NAME OF	0
							_		
			_	_	_				

08.1 08.1 04.1 ... 04.1 88.1 08.1 04.1 08.1 04.1 08.1 04.1 

дхорупкарбо.	Stock F	oosions14	asles at San
08.4@§4	ToM & elaH eilat	012 7881 ,81	THURSDAY AUE: 150 Alts.

37. 07. 08. 07. 08. 07. 28. 27.

			_	_		~
08.44-Mo	Хепом Эв	COL	0Z.4.20	<b>VI</b> II	BO & bluok	350 (
CF. T	DR10	012	01 40	I	Exchequer,	300 1
Q[.ça	Union Cor	09	956		TOCKET	100 C
960	Trojan	00₽	o0d		siaobelsC	₹00 €
89. I 508 8. I 8. I	Sierra Ne	200	18		Confidence,	94
\$700 £7	Savage	069	180 gs.		town Poin	225 (
ΰΕ.Ι	Peerless.,	09₽	£9I	I&	O & BV ROU	220 (
£g	Potosi	OGT	\$5@\$G.		rallodC	S00 C
o08	Реет	1351	982		Brophy	1000
₹9. I	Overman.	091	36,2603	. 3	Senton	\$20 ]
1.00)#9	Opput	nc.	1906			I 002
203 πə	N. Belle I	004	Ut. L.		Salcher Salcher Saltimore	1001
ο03tΘ	Mev. One	OOL	99		3elcher	I 028
09.1	OLBYBIL	00₽	03. I.		noillu8	200
04.1@04.I	M ono	300	19		3. & Belche	240 1
GI.A.	Mexican.	300	506		Arrenta	7 09%
00.20%	Justice	250	OL.I.		rides	120
oc.*-205*******	Bila	10.1	28 8		Alta.	019

SOUTHERY COAL-FIELDS,—Good bituminous coal has been discovered in Tin Mine capyon, four miles from South Riverside. It is almost pure carbon, burns freely and leaves a clean sah. At a depth of ten feet the vein is three feet thick. In Santiago canyon, eight miles from Sutes has, a vein nearly a mile in length and fully three feet in depth throughout is reported as cropping out,

We quote shipments since our last, and shall be of setsam-boiler incurate the prevention and removal configurations will find it to their waywers, Agrg. to, Seco., 15, \$25,000; Wells, Fargo 6; McCornick & Co., 15, \$25,000; Wells, Fargo Co., Salt Lake, 12, \$6,000; Wells, Fargo Football Lake, 12, \$6,000; Wells, \$6,000; We

## San Francisco Metal Market. MARE OF COMPANY. LOOPINGS, SECRETARY, OFFICE IN S. B. COLTOOR, SECRETARY, OPPINGENCY S. COLTOOR, SECRETARY, CO. CAPINGENER S. CO. CAPINGENER S. CO. CAPINGENER S. CO. CAPINGENER, T. Welszel Picter Selley S. Montgomery St. Perzeids Valley M. Co. Capingenia, T. Weiszel Hoste Oliver, SSS Montgomery St. Carsel Hostey M. Co. Capingenia, J. Monrido, C. Capingenia, J. Monrido, C. Caping M. Co. Capingenia, J. Monrido, C. Capingenia, J. Monrido, C. Capingenia, J. Monrido, C. Capingenia, J. Monrido, C. Capingenia, J. Mash. Capingenia, J. Monrido, C. Capingenia, J. Capingenia, J. Mash. Capingenia, J. Capingenia, J. Mash. Capingenia, J. Capingenia, J. Capingenia, J. Mash. Capingenia, M. Co. C

	70	(a)	90 1	war adsoffi	
	_	(a)	00 0	) DICKSILVER—By the Hase	) I
	09		09 9	CD8870081180078.0.	ш
	99		09 1	Jűickeltare—Goke Grelogi Justogel Justo	. [
			03 1	TARRIOT OF CO.	4
	14	w,	01	Norther & Clo	н
	9	e i	Þ	Machinery	-
	9 9	(e) {	Þ	Plow	-
	-	(a)	8	Black Diamond, ordinary at 268	-
٠	97		9T	Tari, Diamond, ordinary at 268	2 1
ı	~O	ன்	68 8	Ohilled, do.	1
ľ		8898			-
į		20	8 00	Dates descent	-
Ł	-	<b>20</b> (	08 I	Shot, discount 10% on 500 bag. Drop, # bag.	-
ı	-		8	Sheet	-
I	99	90	gg g	Ват	-1
ı			CZ Q	Oregon Pig von (1972)  Oregon Pig von (1972)  Blocks, More Wlute (2972)  Blocks, More Wlute (2972)  Sheek (1972)  Sheek (1972)  Sheek (1972)  Sheek (1972)	Ш
ı	7		00 0	BUOCES, INC. Learning and a second	1
ı			וו טט	THE PARTY OF THE P	- 2
ŀ			2 20	Stidly and will	-
ı	00		00 I	Creeon Pig. ton	-
ı	00	UE30) .	-	American Soft, No. 1, ton	н
ı	99	920) .		Eglinton, fon.	Е
ı	00	6300	_	[RON-C-lengarnock for	Œ
ı	12	(0)	T2	FILE DOX ORGENS	н
ı	137	(a) %	71	THEOR.	- 1
i	121		4.5	4000L	1
ı			6T	LEON — Gleakermook kon Likke En Rosee Busspluk Bolgi	ı
ı	12	<b>@</b> (	6 <b>L</b>	Rolt	-1
ı				Arageosa—Haqqoo	ч
ı	8	@_ <u>!</u>	g	Armagosa	п
ľ	8	Ø \$	7.	BORAX-San BernardinoBorAxAG	ш
Į	~	an 8	6	ANT IMONY-French Star	1
ı			5		1
ı	- 4	881.8	1 3	A.YAGSAUHT	п
ı				MHOPESYTE'	1
ı					-

## New York Metal Market. Flasts, old INC—German Sheet, 7x3 ft, 7 to 10 fb, less the cask.

Telegraphic advices dated Aug. 18th give the following wa York prices:

Telegraphic advises dated Aug. 18th give the following Ray are Voir prices:

BAR BILVER—866 per oz.

100 COPERE—410 65.

100 COPERE—410 65.

100 COPERE—510 65.

100 COPERE—52.

100 COPERE—53.

100 COPER

HUXES.—A German journal states that the ThuXES.—A German journal states that the ThuXES.—A German journal states that the manufacture of blue glass and glass fluxes by means of oxides of copper was known to this ancient Egyptians, and was connected with the glassing of eartheaware, etc. Specimens of this the class of work are to be seen in many nuesemme. The blue is, in most instances, truquoise blue, and the glaze is free from oracles in consequence, and the glaze is free from oracles in consequence, being of a suitable obstracter. These glazes are not transparent, but slightly opaque, being of a suitable obstracter. These glazes are not transparent, but slightly opaque, amic ware there are specimens of this glaze in amic ware there are specimens of this glaze in amic ware there are specimens of this glaze in colour,

### New Incorporation.

The following company has been incorporated, and papers filed in the office of the Superior Court Department to, San Trancisco:

SENECA M. Co., Aug., toth., I.ocation, Cheroke, Weada Co., Cal. Capital stock, \$t,000,000.

Directors—Jos. Hustler, J. T. Hall, A. S Bigelow, F. H. Bell, W. Bigelow,

## Bullion Shipments.

Business Risks in Mining.

We remarked briefly not long aince on the certainty with which mining results can now be forecast compared with those blast attend most other pursuits. These remarks gather force from the reports that come to hand daily of failure in one industry and another the whole growing regions or a partial failure of the wheat growing regions or a partial failure of the wheat praving regions or a partial failure of the wheat praving regions or a partial failure of the wheat particular to the root pright has fallen on the cotton plant, or the intervent over steared as in the State of New York, is dight bas fallen on the cotton plant, or the intervent or the hoper ountries, as in the State of New York, is done dight of California, and other dressesses among the expension of similar peats. There is not conference of the white and other dressesses among the sune and other dressesses among the sune and other dressesses among the sune of some one of the sune one that of the sune californial sagents of loss and devastation the products of agents of loss and devastation the products of agents of loss and devastation the products of destroyed.

"Not so with mining tor the precious metals, of searroyed."

"Not so with mining tor the precious metals."

"Not so with mining tor the precious metals."

"Not so with mining tor the precious metals." We remarked briefly not long since on the

agents of loss and devastation the products of many industries are largely diminished or wholly destroyed.

Mot so with mining for the precious metals.

There may be disappointment and loss in individual cases, but they do not extend to entire and silver mines will, as a whole, be what was expected. Look to the Pacific Coast, Mexico, South America, Marietials, Siberia, and it is will be within a fraction of what was predicted at the aggregate output at the end of the year will, as be peginning, and so it will be within a fraction of what was predicted at the eaggregate output at it will be nearly as a business. And long as mining is pursued as a business, and long as mining is pursued as a business. And contact year, and the next, and independent of this output will be just as cortain it will bring the producer just what he had contact out the promple in counted upon, nor will he have any trouble in faceige funnant efforts are as a few probably in the precious metals of ourse, attended with the precious metals on the sell in the lates work, and in the failure of pay ore. These oranting employment of most sell in winting to the precious metals consists in the cost of lead to the precious metals consists in the cost of lead of the mining as in or yearle or the precious metals one of pay ore. These cannot work, and in the failure of pay ore. These cannot work, and in the failure of pay ore. These cannot work, and in the failure of pay ore, though one of sold indigment are exercised, be resulted to a minimum.—Denses, they can be doned to a minimum,—Dense of the doned to a minimum,—Dense of the processes of experience, they can, where one of the orange of the summend of the contribution of the orange of the result of the processes of experience, they can, where one of the orange of the summend o

American Barrel Machinery in Educory in Educory in Peice, is said to be a large barrel factory in Breslau, Silesia, which is entirely fibted out with American-made machinery, the value of which is nearly \$500. There is also, in the same factory, one band-saw (Am.), one borring machine, one concave saw and one circular saw. This merely illustrates how American woodworking machinery is finding its way into distrant and almost unbeated in markets by its exvorbing machinery is finding its way into distrant and almost unbeated in markets by its extensions. The product of the above factory is and with the sid of the above factory is and with the sid of the above machinery about 120 are turned out every 10 hours, which are sold at \$6.66 each.

## Mining Spare Market.

Mining shares continue from and steady, the week, the holders of shares seem confident and should the week. The holders of shares seem confident and show little disposition to seefl, none parting with their holdings at a sacrifice unless compelled to do so, An early state as a sacrifice nuless compelled to do so. An early Comstocks and other standard stocks. The mining Comstocks and other standard stocks. The mining contest of the week a tendency to shrink-sioned by the failure of the list who st syndicate. Toward the close of the week a tendency to shrink-sioned by the failure of the list who st summortean to be supported to the close of the marking was a supported to the constock lode and stocks. But this did not affect the tone of the minportean conference of the marking considered, prices can favorable. Bother mining considered, prices can hardly be said to be unduly inflated,

Books on Assaying.

BY C. H. AARON.

PART I.-Gold and Silver Ores.-Price \$1.

.III GNA II STAAT

Lead, Copper, Tin, Mercury, etc.

Price \$1.75.

Table of Contents:



San Francisco, Cal, 44 Third Street, MINCHEZLEB HONZE

HOT AND COLD BATHS FREE. Laundry Free for the use of Families

Terms, Board and Room, \$1.00 per Day

SOOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

KOLLOKE T SOOTEX

FOR SALE CHEAP. MACHINE SHOP AND FOUNDRY

s. STANDISH, Gridley, Cal.

THE RUSSELL PROCESS COMP'Y

EM YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President.

TRENTON, N.J. X 14 DRUMM STSAN FRANCISCO, CAL TELEGRAPH WIRE, HARD & SOFT COPPER WIRE, INSULATED WIRES OF IRON & COPPER FENCE WIRE, SWEDISH IRON WIRES, OF IRON & CRUCIBLE STEELWIRE, I HON & STEEL WIRE OF EVERY KIND. ELEVATOR, TINNED, & COPPER ROPE, SASH CORDS, LARGEST WIRE ROPE WORKS IN THE WORLD. GALYANIZED SHIP RIGGING, MINING, TILLER, JOHN A ROEBLING'S SONS CO

## etagid oirtoel a Archilectric Lines and Early of the control of th ELECTRIC DEVELOPMENT COMPANY.

sinission of power, either direct or with storage Battories,

For Mines, Hoisting Works, Mills, Reduction Works,

The only complete and satisfactory incardescent avatem. Lighter require no attention a force and satisfactory incardescent avatem. Lighter require needs of working the whole is houst invaluable to contractor into day and afford a means of working the whole is houst invaluable to contractor. It me is an object. Estimates and designs on application, EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

STAMES RUNNING IN AMADOR.—A correspondence of the Amador papers best this generated to one of the Amador papers best the stander of the Amador papers best the stander in which the number to say about the manner in which the number of stands in the county has a ''Four and a ball years ago, when I first visited Amador, there were but the entire years ago, when I first charge was certain to said then that a great change was certain to take place soon. I did not expect, however, if the past the stands would be so great as it has been. Now there are prospects of encetion of 40 stamps; May there are prospects of encetion of 40 stamps; May there are prospects of encetion of 40 stamps; May there are prospects of encetion of 40 stamps; May there are prospecting good ledge; Most Milly Soriand, prospecting good ledge; Most May 10 stamps; Moore, 10 stamps; Laincoln, 20 stamps; Moore, 10 stamps; Laincoln, 20 stamps; Moore, 10 stamps; Laincoln, 20 Mining Company, at work; west of Amador Gold Mining Company, at work; west of Amador Gold Mining Company, the Valparsiae and a large force of with a mamnority turner land a hard of weith with a mamnority turner land a hard of weith when the contract of the day of a past the country that a day and a day an S.'00 DEMEL

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agency ingle-coast will find it greatly to their associates and Agency with the principal nations of the world. In connection with our editorial cases in our office, we have twich said record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The other advantation excountiated through long and careful practice before the Office, and the frequent information accountiated through long and careful practice before the Office, and the frequent examination of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us often to give advice which will save inventors the examination of Patents already granted, for the purpose of determining the patentability of inventions which are not new. Circulars of advice sent free on receipt of postage, Address DEWEY & CO., Patent Agents, S.S. Market St., S. F., DEWEY.

CALIFORNIA VIGORIT POWDER CO.

No. 40 California Street, San Francisco,

("DYNAMITE" OF "GIAUT") **NILHO CIL ACEHINE** 

Blasting Powders.

FOR REMOVING STUMPS AND TREES, Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal. EUKENS, Manager.

THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

CIANT POWDER OF DYNAMITE,

GETYLINE-DANVHILE, Stronger than Dynamite and even Safer in Handing.

NOBEL'S EXPLOSIVE GELATINE, which contains 94 per cent of Witto-Clycerine, and Of Different Strengths as Required.

JUDSON POWDER IMPROVED.

BYNDWYNN' NIETZEN & CO.,

GENERAL AGENTS, SAN FRANCISCO, CAL

APS and PUSE for Sale,

SAN PRANCISCO PHOTOGRAVING

PHOTO SPECIALTY GALLERY 689 CLAY STREET.

Engravings made from photographs, drawings and original designs, for newspaper, book, cared and dop printing,

Engravings made from photographs, drawings and original designs, for newspaper, book, cared and dop manuscript, legal documents, wills,

Engravings and larged or reduced, and or reduced, and or reduced, and or reduced with accountacy. Photos

Engravings, steneogopio views, etc., oth placed, engraved or reduced, and or reduced or reduced, and or reduced, and or reduced or reduced or reduced.

Engraving and reduced, and reduced, and reduced, and reduced or reduced, and reduced or reduced or reduced. The reduced or r

ALL D 24 Post St. S. F. Send for Circular. COLLEGE, BUSINESS DEWEY & CO., 220 Marest St., S. F.

"Tells, for instance, how to put entirely toxether, set a adding upway in this will be adding upwaye in this rivet. This information can be had in no other shape place. Frice of the book, post-paid, only \$1, and this bas

e Author will answer any such question in our col-s, if addressed in our care, by a regular mail sub-set to our paper. "Catch" questions invited, if have a practical bearing.

Owner! Runner! Agent!

до клегл Ритр Макег,

Don't Fail to Write.

quested to examine the contents, terms of and, scription, and give it their own patronage, and, as is a parecticable, aid in circulating the ser as practicable, aid in circulating the widely known to others, and extending its influence in the cause it faithfully serves. Bubscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

Persons receiving this paper marked are requested to examine its contents, terms of sub-

Complimentary Samples.

A. 7881, 8, and head Aug. 9, 1867. A more than 780. 300, 1801. A more of the construction of gas-regulation of gas-regulation of gas-regulation is that they be made so that they are essely accessible for examination and repair, without accessible for examination of an onter casing device consists essentially of an onter casing consisting of alower fixed section having a boxfoontal distribution having a horszontal distribution having a boxfoontal distribution having a boxfoontal distribution have a manular observed an onter contain and an upper section or cap having a flange, and an upper section or cap having a flange, which fits over a similar lange in the conton.

toga, Cal. Mo. 367,909. Dated Aug. 9, 1887. This is a new and useful power device or mechanism to be applied to any machine or apparates where an increase or conversion of power is

GEAR MECHASISM. -William Hanson, Calis-

casing, atationary and provided with a pecultarly shaped in let opening on its inner surface,
and with one or more outlet pipes from its top
and a rotating driver concentrio with the oneing, and having peculiar interior partitions and
a continuous decolarge slot in its pariphery, opposite to the inlet opening of the casing, so
that the water, sucked in by the driver, is directed outwardly, through the peripheral slot,
and droved into the opening in the casing in a
and droved into the opening in the casing in a
continuous atteam.

the next edition or volume.

Typewriting, Penmanship, Bookkeeping.

## Iton and Machine Works.

[Aug. 20, 1887

CALIFORNIA MACHINE WORKS,

No. 119 Boale St. ... - San Francisco ... - Sa

Steam Engines, Flour Mill, and Machines Machines Machines

Brodle Rock Crushers.

Steam Fower, Hydraulte.

Side Walk and Hand-Power

Bile Walk and Hand-Power

ELEVATORS.

Manulachurers of R. E. Henrickson's Felent Automakte

Safety Cstebes for Elevators. All kinds of machinery

and repaired.

E. Gross and repaired.

SACRAMENTO, CAL. DNION IBON MOEKS'

Engines, Boilers, Steam ROOT, NEILSON & CO.,

YED YET KINDS OR

Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired. MACHINERY FOR MINING PURPOSES.

Golden State & Miners Iron Works. Tront St., bet. N & O Sts., "

Manufacture from Castings and Machinery of all Kinds at Greatly Reduced Bates.

Golden State Pressure Blowers. Mold-Board AMALGAMATORS,

first St., between Howard & Folsom, Sts

THOMPSON BROTHERS,

129 and 131 Beale St., between Mission and Howard, S.F. ENKEKA FOUNDRY

MANUPACTURERS OF OASTINGS OF SYRRY DRECRIPTION.

MANUE'RS OF GENERAL MACHINERY.
Works, No. 315 Mission 8th, 3so Francisco.
Special aftention given to Woodworking Machinery,
Steam and Gas Engines. Correspondence solicited.

MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

Address "Business Box A," office of this paper, San Francisco. MINING EXPERT AND GEOLOGIST.

ROSS E BROMNE'

Mining and Hydraulic Engineer,

NO. 307 SAUSOME ST., SAN FRANCISCO.

## The Techno-Chemical Receipt Book

NOW READY,

cal Technology, and their Precedent Application in the Artice and Industries. Edifed chiefly troin the German of Artice and Industries. Edifed chiefly troin the Jacobsen, Phina Marian and Harbert Articles, Micrial Edifers by William T. Wahl, Ph. D. (Held.). Editors, Princial-plain T. Wahl, Ph. D. (Held.). Editors, Furussia, and William H. Wahl, Ph. D. (Held.). Editors, Furussia, and William H. Wahl, Ph. D. (Held.). Editors, Furussia, and William H. Wahl, Ph. D. (Held.). Philadelphia, author of "Galyanaphatha for the Franklin Intelfute. Philadelphia, author principle of Sapares, showing the pull-large world. Philadelphia, author the Prankling one of the Prankling, over 60 percent, of the Frankling over 60 percent of the Prankling over 60 percent of t THE TECHNO-CHEMICAL RECEIPT BOOK.—Confined Several Thousand Receipts, covering the Lakes ost Important, and their Brock.—The Confined Several Thousand Breceipts, covering the Lakes and Inquarities. Edited chiefly from the German is and Industries. Edited chiefly from the German is and Industries. Edited chiefly the Lakes and Industries. Accobes the Confined Several Confidence on Confined Several Confined Severa

ndustrial Publishers, Booksellers, and importers, U. S. M. Blo Walnut St., Philadelphia, Ps., U. S. A. HENEY CAREY BAIRD & CO.,



Back First of the Minine and Scientific Press (un-bound) and he had for \$2 per volume of all months. Fet year (two volumes) \$5. Inserted in Dewey's pasent bind-er, by cents additional per volume. Zinc, Capper or Br se Screens for all purposes. Cali-cornia Perforating Screen Co., 145 & 147 Beale St., S. F.

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulfor Company's Products.

Have correspondents in all the other otities of the United States, Europe, Australia, India, China and the principal states of the Secondary of the Agents of the Principal States of the Contespondents in all the other otities of the States, Europe, Australia, India, China and the principal states of the Secondary of the Agents of the States of the Secondary of the Agents of the Agents of the Agents of the States of the States

General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass.

H. T. SCOTT, VICE-1768 And Treas.

Оно. W. Dicara, Мапаger. J. О В Gunn, Secretary. GRO. W. PRESCOTT, President. IRVING M. SCOTT, Gen'l Manager.

Location of Works, Potrero. P. O. Box 2128.

Agents of the Cameron Steam Pump. STEAM, AIR, AND HYDRAULIC MACHINERY. BOILDERS OF-

Home Industry. All Work Tested and Guaranteed.

FANS, SETTLERS, ETC., ETC. BABY HOISTS, VEUTILALING FAUS, SELF-FEEDERS, PULLEYS,

SHAFFING, VERTICAL ENGINES,
ADRICOURD COUDENSINES,
AUTOMATIC COT-OFF ENGINES,
AUTOMATIC COT-OFF ENGINES,

Office, 216 Market St., S. F.

NNION IBON MOBKE TRY OUR MAKE, CHEAPEST AND BEST IN USE.

Successors o PRESCOTT, SCOTT & CO.

Office, 220 Fremont St., (ESTABLISHED IN 1865.) HINOKLEY, SPIERS & HAYES, Proprietors.

-MANUPACTURERS OFgen Eranciso

Propeller Engines, either High Prossure or Comp Stern or Side-whoel Engines. WARINE ENGINES AND BOILERS.-

MINING MACHINERY.—Hoisting Engines and Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Com-

MILL, MACHINERY.—Batteries for Dry or Wet Crushing, Amalgamating Pans, Settl. 1s, Furnaces, Re-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc. pressors, Air Receivers, Air Pipes,

MISOELI, AMEOUS MACHINERY.—Flour Mil Machinery, Saw Mill Engines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Wheels.

ratinys Pulverizer

DEANE STEAM PUMP.

**MORKS ORE WET OR DRY.** 

OL VIT KINDS' **ENGINES**BOIFEBS

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

OF EVERY DESCRIPTION. Boiler Repairs Promptly attended to and at very moderate rabes.

Deane Steam Pump.

Corliss Engines and Tustin Ore Pulverizers.

PACIFIC ROLLING MILL

Cast Steel Castings and Steel Forgings

UP TO 20,000 LBS. WEIGHT.

True to pattern and superior in strength, toughness and durability to Cast or Wrought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE

STEEL, HOWOGENEONS

LOCOMOTIVE AND MARINE FORGINGS.

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL, ALSO Steel Rods, from \$ to 3 inch diameter and Flatstrom I to 8 inch. Angles, Tees, Channels and other sheep was very stated by the Steel Wegon, Bruggys, and they freek and a Metrinsty and lengths because, Argie, Internal, I tron, Bridge and Machine Bolts, Lag Screws, Nuts, Washers, Bridge and Metrine Bolts, Screws, Steemboat Shaffer, Stanks, Cranks, Pistons, Connecting Rods, etc. Car and Locomotive Arges and Frames, and Item Stanks, I tron, Bridge Bridge and Koods, etc. Car and Locomotive Arges and Frames, and Hithest Parks Rolls of Bridge and Kood Works. Specialty.

PACIFIC ROLLING MILL CO., 202 Market 8t., 6811 Francisco. Lea Olders will have I

NOTICE TO

WINING WEN

ENGINEERS, CONTRACTORS,

TUNNELING, SHAFT-SINKING, ETC. and others interested in

Engineers' Tables of Progress

WITH MAPS, ILLUSTRATIONS

AND FULL DESCRIPTION OF THE

NEM LOBK

Section 16x16 feet; Length 36 miles.

SENT FREE ON APPLICATION THIED EDITION NOW READY.

For Catalogues, Estimates, Etc. addres

INCERSOLL ROCK DRILL CO.,

PARKE & LACY

SAN FRANCISCO, CAL. 8 California St., and 21 Fremont St.

AMERICAN SYSTEM

.घ्रतारेतप्रदेत ठांच्ये अधि

THE ONLY PERFECT SELF-REGULATING SYS-Few linds and known System of Electric Arc Light-Seadiness and Quality and Economy in Operation. Begulation with any known System of Electric Arc Light-standard of the System of Electric Arc Light-petition with any known System of Electric Arc Light-ing.

ELECTRIC IMPROVEMENT CO.,

217 Sansome St., San Francisco, Cal., solifonie, Nevada, Oregon, Arizona and Washington Territories.

N.S. KEITH

Keith's Electric Dynamos

MOTORS, LAMPS

Storage Batteries.

Electric Railways, and Apparaius for the Electric Transmission of Power,

Dynamos and Motors of all sizes for Conveying Power com Waterfalls for use in Mines and Mills, erected under ustanty of performance.

Office, 40 Nevada Block,

INZL IZZNEDI

AND MAILED FREE ON APPLICATION,

Catalogue No.5, Jan I, 1887.

CLAYTON

AIR COMPRESSORS,

**BOCK DEILLS** 

And General Mining Machinery.

Ottice, 43 DEY ST., NEW YORK Clayton Air Compressor Works,

Practical Treatise on Hydraulic Mining.

BY AUG. J. BOWIE, JR.

This new and important book is on the use and con struction of by bytess, Fluranes, Jamie, plans, plans, plans, construction of bytesses, Fluranes, Jamie plans, conditions and deep on Heavy Grades, methods of mining shall one deep good weathing, mechanical appliances, such as nozzles, good weathing, mechanical appliances, such as a murdy-gurday, rockers, independent of such gets of methods of blasting; tunnels and slutices; shilings and methods of blasting; tunnels and slutices; shilings and more interest and users of water. Price §5, post-paid, for sale by Dawart & Co., Fubilishers, Sci Market St., San Francisco.

San Francisco Cordage Factory

Established 1856.

Constantly on hand a full assortment of Manila Rope, as Rope, Tayred Manila Rope, Hay Bope, With a line, etc., etc.

Watte elsee and lengths made to order on short notice

Watte elsee and lengths made to order on or or or

hif bug are knous ath gen kishejand

SAN FRANCISCO. CAL,

BALT LAKE OITY, UTAH,



Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN

Total Mantual

Machinery

BOILERS. ENGINES and Working Mining Machinery, Steam Pumps, M000 HOUT gug

NOTION—All our places are guaranteed to have the definition and are tested best of all reasons are are stated about light weight, made so often belore we started about light weight, made so often belore we started in this branch of industry.

JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material. 521 & 523 Market St., San Francisco,

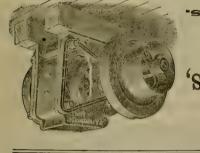
Agent for HOSKINS' BATTERY SCREEUS AND WIKE CLOTH

HADEO-CYBEON VERVA FURNACES

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

GET OUR PRICES BEFORE ORDERING ELSEWHERE, FURNISHED ON APPLICATION,

No. 108 FIRST STREET. FRANCISCO NOVELTY AND PLATING WORKS



ове своянев

American Exchange Hotel,

GO TO

steam Engines and Shingle Machines. Mining Machinery of Every Description,

Koller

HUNTINGTON,

SAN FRANCISCO, CAL. No. 45 FREMONT STREET,

CONCENTRATORS AND ORE CRUSHERS,

Centrifugai Roller Quartz Mill.

## PULVERIZER, PNEUMATIC

POWERFUL OPPOSING CURRENTS

great force request of the steam currents are minute specifies of shoress desired. The last of cause the hardest ores to be pulverized to say degree of shores and shores as stead seems our cause the hardest ores to be provided the construction of the fullverizer, the extremely small and inexpensive wear a simplicity of construction of the fullverizer, the extremely small and inexpensive wear a simplicity of construction of the fullverizer, the extremely small and inexpensive wear a simplicity of construction of the fullverizer. ender-net of eterm, so extenged that they continuously charge themselves with custored or granulated manages o Net lovce and velotivy of the stronger continuents the mineral archada especially with seven of comer or the seven of comer Sevense of the relative of the sevens of

10 TO 200 TONS PER DAY,

Including a Sectional Steam Boiler supplying all the power required.

PNEUMATIC PULVERIZER COMPANY,

2 and 4 Stone Street, NEW YORK,

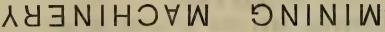
Write for Particulars.

E. A. LUCKENBACH, Sup't.

Mining Vats and I SUKS

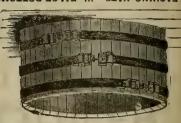
cional View of Pulverizer.





SLEVM ENCINES

This paper is printed with the Manufactor of the Pacific Conservation of the Pacific C Ice and Refrigerating Machines, Shafting, Pulleys, etc.



PRECIPITATING VATS, *FENCHING NATS WITH FALSE BOTTOMS* 

SOLUTION and WATER TANKS

San Francisco. Mechanics' Mills METTS' KOSSETT & CO"

LEAK GLOVE MANUFACTURING CO., D) your merchant for If you want a good pair of Gloves, ask

N. W. SPAULDING

Saws

CHIZEL BIT

dioo's baireast

SPAULDING'S

& \$1.50 Coach.

\$1.25 (Free

\$1, day

me St., Se door from l

San Fran m Bank of

Francisco, nk of Cal.

(\$2\2'00) E' O' B'

FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

Having tested three of your Frue Vanners in a competitive trial with other similar machines for immediate delivery. Yours fruly,

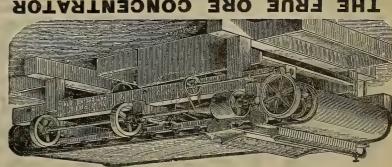
THE MONTANA COMPANY (Limitated),

THE MONTANA COMPANY (Limitated), THE MONTANA COMPANY (Limited), LONDON, October 8, 1885.

N. E.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 add.
A LARTER.

Protected by patents May 4, 1869; December 23, 1874; September 2, 1879; April 27, 1880; Maroh 22, 1881; February 20, 1883; September 13, 1885. Patents applied for.

Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OR VANNING MACHINE. OBE FRUE CONCENTRATOR

## COMPRESSED and WATER POWER

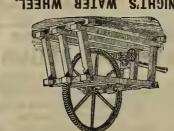
FIRTH, 18 and 20 Fremont St., San Francisco. A XIA



SAN FRANCISCO, CAL

NATIONAL ROCK DRILL.

WINERS, HORSE WHIM



-FOR-KNICHT'S WATER WHEEL,

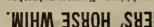


BOILER

NATIONAL AIR COMPRESSORS. MILLS, PUMPING AND HOISTING

HEINE SAFETY

SINGLE OR DUPLEX, STEAM OR BELT POWER.



All wrongtht from. Nogerre, no breakage, ne horse will easily handle rock or water to a depth if 550 feet, gring entire eatisfaction to the prospector. rice, complete, \$200. If0 sold on this Cosst.

Over 300 in use. All estimates guar-anteed. Send for Circular.

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

DURABILITY,

AND FACILITY OF INSPECTION and REPAIRS. ECONOMA'

Bollers can be seen working in San Francisco at Pelace Hobel, Spring Valley Water Work rice. Bros. & Co., California Jute Mills, and other places. .ean ni won rewor earoH 000,06

Guaranteed More Efficient than any other Boller made.

WITSON'S PATENT GAS-PRODUCER.
STEAM BOILERS of all descriptions.

WITSON'S PATENT GAS-PRODUCER. REFRICERATING MACHINERY for Steamships, Browerles, and Cellars,

Mining Company: Mill for the Alsaka Mill and Mining Company; 60-stamp Mill for Quartz Mountait
Mining Company. Franse, Steam Capetans, Cargo Winches, etc.

Pumps, Steam Capetans, Cargo Winches, etc.

BUILDERS OF

**MATER TUBE** 

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Rossting Furnaces of all iduds.

AIR COMPRESSORE—RESSORE—The Power Internation.

HYDRAULIC PUMPING and Hoisting Machinery.

WEQUEHT IRON WATER PIPE & Specialty, Mora.—Have just completed order for 35 miles of 44-inch pipe of 4-inch rion for Spring Valley Water Works Company, San Francisco.

SAW—MILL MACHILERY of all Kinds.

STEAR ENGINES—Colles, Silce Valve, Poppet Valve Automatic, Single, and Compound.

STEAR ENGINES—Colles, Silce Valve, Poppet Valve Automatic, Single, and Compound.

STEAR ENGINES TO A facility Water Works Company.

GOLD DATE OF COLLES FOR THE STEAR OF THE STEAR OF THE STEAR STEAR OF THE STEAR

MACKETH PATENT STEEL-RIM PULLEYS—Fifty per cent lighter and 25 per iron pulleys; will not break in transportation.

NOTJEZA **POILER** 

A NEW AND RADICAL DEPARTURE IN

GENERATOR. **STEAM** 

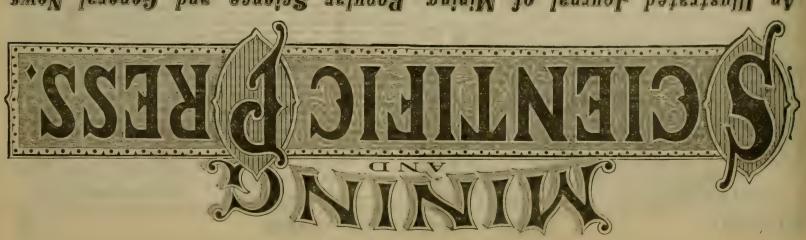
OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

CIRCULARS.

MINING MYCHINEBA

PACIFIC IRON WORKS,

San Francisco, Cal.



BA DEMEA & CO. Illustrated Journal of Mining, Popular Science General News, pue

SAN FRANCISCO, SATURDAY, AUGUST 27, 1887.

Isiretem esteaw Vilerenes sidt to to care for the rapid accumulation

as ean 101 sm101 dons ofni ysle and the facility of converting the moval of the slag, the reduced space occupied by the dump piles, of this method are the prompt reof cars carrying the slag in a liquid condition. The advantages augmenting damp piles, have brought into general favor the use and consequent rapidly output of American blast fursufficient to say that the large and the means of conveyance utilisist is is is is a need not be detailed. It is

ure is also marked by a more general adoption of methods by which is carried The progress in iron manufactmay be desired.

тв вэвион-упитвер reasonable to prophesy the early manufacture, it does not seem untte production, and, anticipating the prospective advance in pig-iron in vessels away from the point of

immediate vicinity of the furnace casting-sheds removed from the Even where it is cast into piga,

terially alter the arrangements of Such casting sheds would mastack would, perhaps, be superior to easting in beds in front of the

cation of furnace plants at sites now considered disadvantageous. nies in construction, or the loproduct, as well as possible econoff raw material or shipping the arrangements of tracks for receivmit, in many cases, savings in the blast-furnace plants with which we have become familiar, and per-

ing bare, so as to maintain contact between the wheels and rails zilaupe evitomocol diw bebivorg gravings consists of two four-wheeled standard-gange trucks, lustrated in the accompanying en-Mining Engineers, in which he describes a tilting ladle-car for molten metal or alag. The car ila mori sake two take from a paper by John Birkindine, read paper by John Hirkindine, read before the American Institute of

sisting of a toothed rack, мріср епбакев while passing the uneven tracks common to cinder dumps. A heavy cast-iron bolster is pivoted over each truck, the upper faces con-

Titing Ladie-Car for Molten Metal.

Treedom of motion of the ladie out when reversed, thus allowing for the ladie out the ladie of considerable importance to the process and versel and worm gent give motion to selvent and severe changes of the servent of pig iron is the disposition of the servent of the s

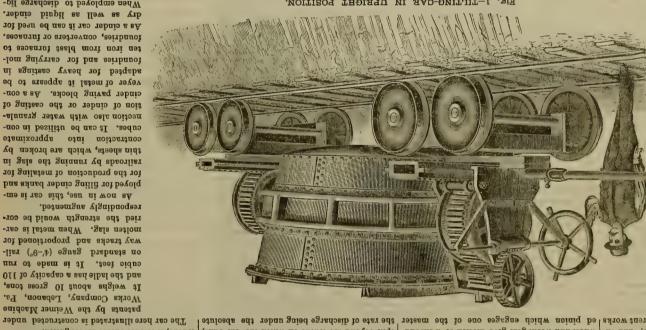


Fig. 1-TILTING-OAR IN UPRIGHT POSITION.

blast furnaces, particularly where several are grouped together; or the casting of wheels, causing it to revolve, the casting of properties or furnaces. In some large blast-furnace plants, the motion to the continuation of the converters or furnaces. In some large blast-furnaces plants, the with fire-brick or refractory material.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces with most particular and the considerable cost for labor, iron is carried molten from the blast furnaces. In some large blast-furnaces plants, the material.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces with material.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces.

The kettle is lined in the ordinary manner, iron is carried molten from the blast furnaces with first properties of lining. In six is carried molten from the plast furnaces. When employed to discharge liqrol been ed nas ti res rebnis a aA. rebnis binpil as liew as vrb

of the horizontal rack, and also with the ladle tipped to spill the cinder, the gear-wheel being run out toward the end of the rack, in a vertical position, with the shrouded gest-wheel in the center The illustrations exhibit the from one to two months only. srieger foue slof-qet diw mrot and test eguini bas temperi ers no lining has had to be renewed or patched in the tilting ladle de-scribed, while in the ordinary

foundries, converters or furnaces. tom grivates for carrying mol-ot assaurat task mort nori net

adapted for heavy castings in tion of cinder or the casting of cinder paying blocks. As a con-veyor of metal it appears to be

contraction into approximate cubes. It can be utilized in con-nection also with water granuls-

thin sheets, which are broken by contraction into approximate

ni yale odi gainnur yd ebsouligr for the production of metaling for

As now in use, this car is em-ployed for filling cinder banks and

on standard gauge (4-9") rail-way tracks and proportioned for molten slag. When metal is car-ried the strength would be cor-

and the ladle has a capacity of 110 car or is made to run

Mamber 9.

respondingly augmented.

the process continues to work as ing worked up to 94 per cent. The superintendent states that if information that the ores are bemill a recent telegram gives the mine, Montana. It is a duplicate of that in use in the Douglass mill, Nev., and the Ohrisky mill, Sliver Reel, Utah. At the latter the mill a recent telecram gives the been sold to the Drumlummon Kae process of amalgamation has full plant of the machinery for the RAE'S ELECTRIC STSTEM. - A

seaneque llim ent lla at present, the saving will pay

the testh of shrouded master wheels secured to a cast-iron half entring the ladie or the charge of cinder or where

This ball is not strated as over can be placed below the ball prevent the ladie to the ladie or the charge of cinder or the metal cast.

This ball is not strated a cost-iron ball entring the ladie of ing the weight by the angle-fron ring secured to the kettle, When the charge to cinder or When ready to receive a charge of molten tied as much slower as might be desired.

When ready to receive a charge of molten tied as much slower as might be desired.

When the contents of the ladle have been discharged, the vessel is raised to a vertical position, the master wheels in the middle of the discharged, the vessel is raised to a vertical position of the contents of the

FIE. 2-TILTING LADLE-OAR WITH LADLE TILTED.

ai notation of the one, and one of the surface of the control of t

A Solution Filters Through the Charge

hyposulphite from the sodium sulphide, the solution will be much stronger than 14 get comp,
and will probably exceed the original stock solution in concentration. In case the extra
lution in concentration, In case the extra
solution is preceded by oridinary solution,
which is alwaye done in treating rosated ores
without caustic lime, and sometimes in treating
raw ore, it can be made in the lixivistion varietion way
itself, on the too, of the ore, by stopping the
lasching as soon as the liquid has sunk to the
lasching as soon as the liquid has sunk to the
surface of the ore. The copper sulphies is now
sulphite, and under the same precautions
sulphite, and under the same precautions
sulphite, and under the same precautions
ore, about 12 inches deep, with solution. As
this objust is not sufficient to extra solution has to be made in solution as attracts the
total amount of ore in the very bearings in suction has to be made in several charges in sucsession. This method, in the cases specified,
is slrways used and recommended by Mr. Rusself, the extra solution is in most cases
specified.

The extra solution is in most cases

Lixiviation of Silver Ores.

The Extra Solution. [илмвек 5.]

This is not beyong the state of the state of

trong the property of the process of a sea of the countries of the contribution of copen and the colution of copen and contributed of contribution of contribu

The Sodium Ostbonste Solution. The Solution of Trons and Trons Solution of Solution of Solution of Solution does process, has been been bugbt, this solution does not require purification. It is made by dissolving the sods in hyposulphite stock solution the in preference to water, so that in prediction of the stock solution the interest of the stock solution in preference to water, so that in prediction of the stock solution from 12 to 16 pounds of sock solution from 12 to 16 pounds of solution in the storage table is at large solution. A copper sulphate solution. A copper sulphate solution is ozerefully added, while stirting, until a black precipitate cases to support sulphate is consumed to purity 100 pounds of sulphate. Canage tanks. Canatic sola is also removed from the solution by copper sulphate.

The Sodium Carbonate Solution.

The extra solution is in most cases used to best advantage at a temperature of from 90° to 120° F. If circulated by the Korting injector it is more or less heated thereby.

Solutions General Rules for Handling the Lixiviation

Hefore entering into a detailed description of the constant of

EXTENSIVE niter beds are said to have been discovered near Mount Hope, Bureks county. ther Territory.

UTAH'S COAL PRODUCT.—From advanced sheets of the United States Geological Survey Reports, Division of Mineral Statistics, it appears that in 1886 Usah produced 2,000,000. This is double the quantity produced by any This is double from quantity produced by any other Territory.

The exercisher more inches—rather more the ore. This is easily accompane the ore. This is easily accompaned fow trials.

A vet 14 feet by 6½ feet, as formerly described, will hold from 38 to 48 tons of rew ore, or from 57 to 38 tone of reasted ore.

To be Continued.)

The man advanced advanced to the continued.

The facility with which a Solution Filters Through the Oberge oree as large percentage of alimes acts injurious. With raw ores a large percentage of solutions acts injurious-ores a large percentage of solutions acts injurious-ores a large percentage of solutions acts injurious-effect. Well-roasted ores generally leach freely, especially if they condition. This difficulty may become serious in case raw tailings, mostly in the form of slimes, are treated.

By the Korting injector ettached to the district of the lixivistion vats, a vacuum charge pipe of the produced and the solution of the solution of the school of the fortion of the fortion of the fortion of the case and the orivous to the fortion of the case and the orivous to the fortion from the condition of the lixivistion becomes the education from the obtaining of the variation of the extra solution becomes the oliveral ston of the extra solution becomes in the education from the orivous the constitution of the extra solution becomes the oliveral process. The rate of leaching of the obtain with the substitution of the came valle, so that it for the bottom of the lixivistion of societaring it to leave it at that rate instead or solution in lixivistion of societaring it to leave it at that rate instead or of societaring it is intromed to the purition of societaring it to leave it at the trate instead or of societaring it is strom for the value of the lixivistion in lixivistion of ward in the lixivistion value in the original process of the control of the lixivistion of the lixivistion or of the election of the lixivistion or or or original process of one original process of the original p

\*A paper by C. A. Stetefolds before the American In-stute of Mining Engineers.

exitent of Alaxam.—Tew persons realized bow extensive our extreme Morthwestern are. Morthwestern sees on are extreme Morthwest possessions are. The lowest boundary is 50° 40° north, and the highest the Arctic coesn. The eastern limit is 131° west of Archiceler in 187° 20°. San Francisco is anoth 500 miles nearer the furthest point of the western coast of the Morthautian is a Mort of Morthwestern the most of the Morthautian is a mar Columbulle the center of population is near Columbul. Olive, San Francisco is 250 miles short of both of the World is a mar of the order of the Morthautian is an order of the Morthautian is a mar Columbulation in the Columbulation is a mark of the Morthautian is a mark of the Morthautian is a mark of the order of the Morthautian is a mark of the Morthautian in the Morthautian is a mark of the Morthautian in the Morthautian is a mark of the Morthautian in the Morthautian is a mark of the Morthautian in t

SIXTY THOUSAND Americans to to Entrope and the control of the cont

Appears distinctly emptical mescad of periocal, olivoular."

In making anoh announcements without explainting the cause, coicabifle men throw a veil polinting the cause, coicabifle men throw a veil polinting the cause, and will the olivous artisted the same cause or conditional, it was when the same cause or conditions existed that gives our moon nearly that the appearance when it is within a few days of full moon. Were our moon at a far greater thal moon. Were our moon at a far greater the distance the more uniform is the outline of oljects, whether seen by the naked eye greing the proportional cliescope. A felsecope is no more accurate than the naked eye, giving the proportional distance; or, in other words, gives the same distance; or, in other words, gives the same outline of objects at greater distance and outline of objects at greater distance.

War Warnt First, and words, gives the same outline of objects at greater distance.

appears in the public prints:

"Two astronomers of the Grand Ducal Observation that the disk of the planet Uranus appears districtly elliptical instead of perfectly olicular."

In making such appears districtly elliptical instead of perfectly openlar."

The Planet Uranus.

Editors Press:—Having just returned from a tour of observation 60 miles down the Colorado.

Tiver, on the California side, I send you a few mine ing notes gathered on the trip. The mountainer along the river consist of porphyry and limes along the river consist of porphyry and limes along the river consist of porphyry and limerated a sendatone mixed with which their banks the name of the cannot be about a stand of a sendatone mixed with which their presented have gathered for the river color but what is represented have, I is neverties here it is a stand of the country this, the river is estimed have, it is never the river and almost destitute of water save, many which the Colorado, without wood, except a sparse becometry this, the river.

In the hill country discent to the Colorado, without wood, except a sparse sey water save, many rich depotes to the river.

In the hill country adjacent to the Colorado, without wood, except a sparse sey what the wast of water save, many rich depotes to five the gold and silf found. A few miles back from the river, how yet have been discovered and located, the Black of the footwall, one of value for solorado, one of great a despitude of the most noted. A few miles back from the river and can one of greats at depote of 35 feet without reaching for year professes. All the ore bove this leave the footwall, and is supposed to be at each of the colorado, and the footwall, and is supposed to be at each of the colorado, and the footwall, and is supposed to be at each of the solor working. A lot of it is to be one of great value. The ore consists of black the footwall, pay for working. A lot of it is to be sone to the solor working. A lot of it is to be seen to the solor working the most of the will be point, on the Arizons side and prosesses at one of great value. The ore consists of the solor work has year value. The ore consists of the solor work has year the miles beyond the solor work has year and work the footwall in free gold, though the hill of or the solor work has year of t

Mori Paris:-Having just returned from

We admit, unindorsed, opinions of correspondents,--Eus CORRESPONDEN**CE.** 

Mines on the Colorado.

Glacier Point, Yosemite Valley,

the spectator with that feeling of a we experien The engraving on this page gives a view of Glacier Point, one of the notable features of the Yosemite valley. This view does not impress

to seemte a valley. This view does not impress the spectator with that fieling of sweexperienced when looking at some other portions of the weekperistors of the looking at some other portions of the valle is obtained by the look of the precipitous walls and stupentonic being more remarkable for its beauty than its grandent. It lacks something of the precipitous walls are not though at one or two places the walls are not chough at one or two places the walls are not chough at one or two places the walls are not being help and letty but it overhanging, after the manner of Table Mook at Mingara Falls.

From this over-justing projection a splendid duced this obtained.

June specification of the matural seconds that the forth it was the mental and electrical theory. John Muir, a geologist who has bort being withdrawn from underneable during some of those convulsive movements which down to an unknown depth, owing to its support being withdrawn from underneable during some of those convulsive movements which down to an unknown depth, owing to its support being withdrawn from underneable during some of those convulsive movements which down to an unknown depth, owing to its support being withdrawn from underneable during some of those convulsive move depth of so extenvocation that have glacial theory, that graciers compensation, as it is believed that ordinary water verticals and orooked. There is the same objection to the glacial theory. The subsidence of rection, as it is believed that ordinary water verticals and orooked. There is the same objection to the glacial theory. The subsidence and objects and ordinary was the most plausible, but we can theory and the subsidence and the su

AMERICAN VS. RUSSIAN PETROLEUM.—This country need now a the strength of the percention of the percent of the

An English Shiver Investigation of all English Shives Investigated and Lady Herschell strived at Newport yester. English during the last Gladstone administration and is obstimate of the Committee on Silmons to investigate causes of continued depreciation of that metal. After a week's visit he caption of that metal. After a week's visit he caption of that metal. After a week's visit he constituent destigate of and thence to San Francisco, where he will investigate the production of silver.—Boston Journal, Aug. 10th.

American R. R. Cars for South American Carlinds and Cars for South American Carlinds and Carlinds and Carlinds Company has contracted to build 350 cars of various kinds for a railway company on the La Flate river region. The road is 700 miles horg. Each car is to be drawn by three horses, which are changed at stations ten miles apart. This is changed at stations of the cores are are also seen and changed and carlinds and changed and carlinds and carli

THE Times-Review, in a long article concerning the mines of Lucators, asys. "Hudreds of maps of mear is idle who wishes to work. The mills have been put in order and in a few weeks 30 stamps will be trushing ore."

WILLIAM WOOLCOCK and Thomas Bray steworking the Trinity mine in Star District for antimore, They sing about 15 tons of the ore monthly to San Francisco, and make good macks at the business.—White Pine News.

A LARGE amount of heavy mining machinery is being shipped by teams to Tuscarors. In-dications are that the camp is on the eve of a tremendous boom, such as it has never experienced.

Geer quantities of ore are now arriving at the Selby Smelting Worke, the receipts being from all parts of the coset.

ONE HUNDRED, AND SIXIY MILLIONS OF CATHERING IN The CATHER ONLY WITHIN THE PAST.

A CLAY suitable for making good fire-brick has been found in the eastern part of Salt Lake Oity.

cartments or declivities of the primity of the greater part of the primity of the greater part of the primity of the carmy of the summit of a great number of eccared from the restito the restice the new of the conse may be of Celto-Roman origin, while the others he came of the conse may be of Celto-Roman origin, while the others he came origin, while the others he came origin, where one before the recent progress in archaelogy that the other progress in archaelogy that the profession is the the recent progress in archaelogy that the other profession of the mich profession members of the part industrial, semi-military, as is yet the case of the profession of the mich profession members of the mich profession of the mich profession members of the profession of the mich profession members of the profession of the mich profession of the mich profession members of the profession of the mich profession of the mich profession of the mich profession of the profession of the profession of the mich profession of the pro



OF GLACIBR POINT.

In as been variously estimated by geologists, astronomics and other scientific men, the divergence of views on this matter being, in restingthing the divergence of views on this matter being, in the string the period of such cooling should be placed at the one solid mass, arrived at the conclusion that the provide the such cooling should be placed at the provide such cooling should be placed at the provide such cooling should be placed at the prior to choing should be placed at the prior to that time the scholging that 100,000 of years is the limit of geological plateon, and the provide such cooling to fluction and the provide such cooling to black as the such cooling to fluction of years as to how many millions. The 6000 years of the such cooling to fluction is passing over us; they do not extend the into the yeated such as the such as th A GRAUD VIEW OF GLACIER POINT.

These Ancient Metallurgists and subsequently the green mountains of Phry-

Were considered by the mass of the people as anchanters and magnians, and the blackyles, the Krabires, the Telebines, the Caretes and the Labires, the Telebines, the Caretes and the Krabs, who represent their modern remains, have inherited their mysterious reputation. That is another explanation. But our ancestors in the marked the second of the marvelous—concerning the marked surprising stories to their contemporaties. Moore, from the Saracens, whom they work the holy sepuloher? Have they not brought back in their weighty bages some special metallurge processes, which they not brought back in their weighty which they not brought back in their weighty war along the orecent expenses, which they not brought back in their weighty war along the oreset of Syris or of Egypt? We ware along the orset of stillent weight only should be the original find in these different versions, indications of the savants the case of services of Belgian to original find in the task of resolving this control of the origin of the task of seasons. We leave to drive the savants the task of resolving this control or the savants the task of resolving this control or the savants of the task of seasons. We leave to drive the savants the task of resolving this control or the savants of the task of seasons of the savants of the task of seasons. We leave to drive the savants of the task of seasons of the savants of the savants

Have initiated our populations into the marvelous—concerning the secrets of their stieder the terms of the secrets of the secret of the s making the smiths more economical, Thus we have been able to secentain the more outsides of the new of the secentary of Iron-Working. It is not countries of Sambre-et-Meuse, the list of being of progress slowly realized by the conservor of progress slowly realized by the conservor of progress slowly realized by the conservor of the countries of Mamur, Unimay and Charlestor of the countries of Mamur, Unimay and Charlestor of the countries of the secority of the second of second of the second of second of the second of second of the second of the

Could the Saracen Smiths

which the ancient workers to extract the iron which the ancient workers by todically blot there.

But in 1860 the region comprised between our two rivers was still stream with that decide be deeply searched, and attesting an inmes deeply searched, and attesting an inmes deeply searched, and attesting an inference of the searched, and attesting the red statute a vertable topen book for those who read in excavating them. In turning the red statute a vertable topen book for those who read in excavating them. In turning the red laves, that is to say, in according the steps of the bistory of metallurgy of the country of metallurgy of the staticity true witnesses, some pottery, some manufactured products, some coins, etc. They have free quently shown to the past, the successive developments of the siderurgic art. The more velopments of the siderurgic art. The more stations were some considering to siderurgic art. The more stations were some some orders and necessity of the scoria, the single were bave found. It was because the method we have been able to accertain the

Translated for the Passa from the Trench by M. M. M. Juguer Af the Passa from the Trench by M. M. M. quered clearly says ('t-tribated, the Belgians account is account in the Belgians were already oxploiting mines. Our eminent between and by the principal authors. It was with an iron sword that the Belgian deviced his round, bis voltage, bis village, his forest, being the thoman invader; but, while the begins of Cassar bessead weapons of sharp hard being the thoman invader; but, while the barbancous warrior bad in his hands only a flexible sword, while the barbancous warrior bad in his hands only a flexible sword, while the barbancous warrior to the Celes the contrage. Polyhine, a Greek army the Court of the second coentry B. C., stributed from the contrage. Polyhine, a Greek from the contrage of the Court of the Morth Holling the freek of tron. Opper and lead in Gaal. The vesses of manufacturing the bad reached when were provided with any were entirely masters of the Norman and of the Court, The Cauls had come as a sets of the Venetarus, of the Morin and of the check of tron. Opper and lead in Gaal. The vesses of an index prochoses of the Morin and of the being the were provided with any were entirely masters of the twork very different entering in the theory were entirely masters of the Proche before the Christian era may we assign Celto-Belgie sleet they were entirely masters of the positively of the country between the same of the country between the country between the country between the same of the country between the Sambore-et-Moren of the country between the Sambore-et-Moren of the country between the Sambore-et-Moren which the anoient workers since 1860, modern the country between the Sambore-et-Moren which the sancient workers in order the second itself of a great part of the the country between the Sambore-et-Moren which the sancient workers in order in order to be the country between the Sambore-et-Moren et order the country between the Sambore-et-Moren et order in order the country between the Sam

Translated for the Passa from the French by M. M. M. [NUMBER 2.]

Origin of Metallurgy.

## The Value of Failures.

fact, proved to him of great practical advan-tage. This accords with the teachings of the old adage, the school of experience, though a failures can be studied with profit-have, in perience in the operative departments of the business but what is ready to admit that these in mining, milling and metallurgical ventures in the State of Colorado, observing that there is not probably a man who has had large extaught by the many failures that have occurred The Mining Industry contains a long and resonal each loss on the vittes article on the value of the lessons

heed to these warnings served to them gratu-itously, though they have cost their predecesent and oncoming generations if they pay due come after them. Well will it be for the presas evorq lliw snemim reponeiq ent to seesol bas own own selfights and a selfights of the se seed of the church, so let us hope the mistakes But, as the blood of the martyre has been the for wonderment. Every great industry calls for eachifices on the part of its early promoters. fret workers did not more widely err is cause the circumstances have been committed, is not at all strange. They were not only excusable, but were to have been expected. That these even the most grievous mistakes, should under for operating that even the most expert and solliful were at fault. That blunders, and there being often such an absence of facilities hard, is generally a good one.

At the inception of gold and silver mining in this country we had everything to learn, with but few competent teachers and only limited opportunities for learning the brainess according to the best-established rules and methods. All was new and most of the conditions were bad, there begins of the conditions were bad,

perfection to the optical learning and delicate workmanship of this firm, whose masterpiece is the 36 inch objective of the Lick telescope, now safely stored and soon to be placed in position upon Mt. Hamilton. European and American observatories owe their bim, with his two sons, devoted to the making of object-glasses. The finest instruments in in servonomy and began the manufacture of telescopes. In this pursuit he developed such marvelous telests, and strained an event and other telests. the most accurate and powerful telescopic lenses ever constructed. A portrait-painter in early life, he afterward became interested ASTRA.—Alvan Clark of Cambridge, Mass., who died the 19th instants and the System, was eminent among scienario of the most factor of the stant and the stants of the stant

keep the mill running a long time. ing to be milled, and enough ore in sight to They are about to start sinking deeper. There are about 1500 tons of ore in the mine waitcom-shaft. It has been replaced with iron. oany at Candelaria, Mev., are now working 60 men at the mine. The mill has been shut down for a short time on account of dresking of steel Mr. DIABLO MILL & MINING CO .- This com-

tions on the Colorado No. 2 mine. from England, with capital to resume operacounty, is expected to arrive in a short time eniqlA to senim edt gniqoleveb ni venom to energetically and expended an enormous amount English corporation which has for years worked LEWIS CHALMERS, the representative of an

interesting problems. ground, and the main tunnel may be pushed through Mount Davidson and solve some very the company will begin to develop its mining er before the present year ends, and after that will probably be out of the hands of the recei THE Stries of the Sutro Tunnel Company

On October let the California's full complement of 80 stamps will be in motion, operated by battery mill, making forty in all operated by steam power, will be dropping on Consolidated California and Virginia ore by September lat. Twenty additional stamps in the California

tased ent in benierts. The two vessels will be constructed together, but the facilities of the yard will not be er will not necessitate an increase in the force. Scott says that the contract for the new cruised at the Union Iron Works. TWELVE hundred men are at present employ-

The Talked-of Mining Revival.

more properties on the market. gaiselq rot snoitersqerq ni bas tametiexe made its advent, manifesting itself in a growing calities this revival is said to have already vival of mining, the most of them hailing the same with evident satisfaction. In certain lotrom the mineral regions predict an early re-We observe that certain of our exchanges

faror with a return to the swindling methode so long in vogne, then this anticipated revival is to be deprecated by every friend of the minthan the inauguration of another speculative meet with general approval and welcome. But if by a mining revival nothing more is meant ance it by legitimate means, the event would about as would largely increase the profitable production of bullion and otherwise tend to ad-If such a revival of mining could be brought

ordered industry, not the least of its gains consisting in its having been able to redeem itself from the odium to which it was at one time so ment during the past three or four years than it had done during any 10 years before. It is at this day an eminently safe, staid and welleonevbe bilos erom ebam sad gainim to donard dition, and, as a general thing, is being done well. It is hardly too much to say that this of the business, which is now in a healthy con-Thrown upon their own resources, the miners, obliged to go to work and practice economy, have reached at last a more thorough mastery gle along with the aid of very little capital. severely, having been left for a time to strugregarded by the investing public with distavor, and justly so. As a consequence it suffered many crimes committed in its name. It was ing industry. Mining for the precious metals had but a few Mining for the precious metals by reason of the

dered his calling not only odious but infamous. niner of his bard earnings, has well-nigh reneade of plunder, which, beside despoiling the preyed upon by the harpies of every kind and vocation. It is time to call a halt in this cruit been abused by speculators and sharpers and mining through the wrongs practiced upon it been brought into discredit. Long enough has liely exposed and denounced. Long enough has they see to it that the frauds and swindlers who have in times past so dishonored their calling and worked them such harm are heresiter publi eteretai awo riedt gaillneaco ed lliw eranim and like meretricions methods should not only be discouraged but resolutely suppressed. The without recourse to tricks and puffery. It re-quires no excitement or booming. The less of these the betier. Misstatement, exaggeration, It is strong enough mon to stand on its

in mines, mining stocks and speculations; nor does it at all help matters to be reminded that that have been sustained through investments It sickens the very soul to think of the losses

breed an unhealthy excitement, conjure up the wild spirit of speculation, and restore to life the whole brood of old-time iniquities now so nearly serves open to the one of a necessaring a re-now we seem a little argent in resisting a re-those other methods that formerly tended to bring the business of mining into disrepute and otherwise work it so much harm. We would otherwise work it so much harm, we would otherwise work it so much harm. selves open to the charge of inconsistency if of fraud. We shall not therefore be laying ourtaint teasl eat ti trods had tadt emedos to tosi promoted or countenanced any enterprise, prothey were exposed. Never have we wittingly the years of our journalistic life, we have sought to discourage gambling in all its forms, warning the investing public against the dangers to which lesses no one can say. Steadily, throughout all number. That the Mining and Scientific Press is in any sense responsible for these That the Mining and Scientific ours to look after, and correct so far as may be, the evils that especially concern the business of mining, and which, we are sorry to say, have been appalling in both their magnitude and even the same of the s equally wide-spread and even more ruinous. Deplorable as they are, these latter come not within the province of the mining journal. It is losses in other lines of gambling have been

in the Court d'Alenes, one weighing 29 ounces Two nuggets of gold have lately been found

Ir is stated that the Oswego iron mines, near

Portland, Oregon, will shortly be started up.

Agitating for a Division of the State.

northern and the southern portions of the State—a pretext without a shadow of reason to justify it. movement is the alleged diversity of resonroes, pursuits and interests that exists between the no more of it. The pretext for a revival of this idle talk about a division of the State. It is a long time now since this question was last agi-tated, and from the little favor it then met with, there was reason to hope we should hear With the "land broom" in Southern Califor-

a ed ot bias ed toequer respect be said to be a ests of one section of the State are so nearly identions with those of every other section that most northern county in the State. The interthe former the most southern and the latter the or grain that can be grown in San Diego county that cannot be equally well grown in Siskiyou, the natural productions so nearly homogeneous as in California. There is hardly a plant, fruit the climatic conditions are so nearly slike and vering so many degrees of latitude in which There is not another country in the world

as estate and to moisivib a state as these can be supplied by the north, and just stuffs for local consumption. But then all would hardly be able to raise enough breadthe country to become densely populated it lumber resources are inconsiderable, and were rather poorly off in the matter of fisheries. Its There are certain products in which the si ti is deficient. It is

ter than a desert? A sorry State, to be sure, a so sale a so a lake or a be Sierra Mevada mountains, being little betall that portion lying east of the San Diego and monwealth would this be, fully one-half of it, the territory here indicated, what sort of a co new State. Supposing the latter to consist of to torm the northern boundary of the proposed This line being straight and avoiding the necessity of dividing any existing county, would naturally suggest itself as being a suitable one ary of Monterey, Tulare and Inyo counties. Supposing a division of the State agreed upon, where is the line of separation to be drawn? There is a line running east and west cores the State, forming the southern bound.

Union. Justly has she been called the Empire State of the Pacific, a distinction her people ing next to Texas, the largest State in the now constituted, presents a territory regular in Deserts the barren, made up of srid and sandy wastes lying to the east. California, as the tier of coast connties; Petres the rocky, composed of the central mountain region, and There would be Felix the fruitful, consisting of nated respectively: Felix, Petres and Deserta. of this new State, like that of Arabia, might properly be separated into three parts, desigmprised within these limits, the territory navigable river in it!

pioneers be on all sides preserved intact, however much a small number of ambitious politi-Let us see to it that the lines so fixed by these the State is formed by the crest of the Sierra Nevada, and the Colorado river, than which nothing more suitable could have been adopted, more than 500 miles the eastern boundary of boundaries should, as far as practicable, consist of natural objects grand and conspicuous. For area and be symmetrical in form, but that its public domain a new commonwealth, they de-termined not only that it should include a large than they knew. Left to carve out from the retted beblind sinrolilaO to seirabanod edt gai to any proposed act of dismemberment.

The framers of our State Constitution in fixshould be careful not to forfeit by consenting

take place in the course of a thousand years point with him, since no one can tell what may looks to a very remote period in the future, then it is hardly worth while to dispute the less way perhaps, say a very foolish thing; or, if the time contemplated by the learned Justice very wise man may sometimes, in a thoughtpressed such an opinion, it serves to show how into two States, the division being only a ques-tion of time. If Judge Field has really exopinion that California is bound to be divided seek to disturb them. It is said that Judge Field has expressed the

> CIENTIFIC D RESS MINIME

DEWEY & CO., Publishers. A. T. DEWEY.

OH.e., 220 Market St., N. B. cor. Front St., S. F.

Terms of Subscription. Without Subscriptions will be solved without cash is advance. All arrearges must be the tate of \$3.50 per snum.

Advertising Rates.

Address all literary and business correspondence and Drafts for this paper in the name of the firm. 

Our latest forms go to press on Thursday evening.

Entered at S. F. Post Office as second-class mail matter

SCIENTIFIC PRESS PATENT AGENCY.

A. P. DEWEY. G. G., PATENT GOLIGIORS.

Saturday Morning, Aug. 27, 1887.

### TABLE OF CONTENTS.

EDITORIALS.—Tilting Ladie-Car for Molten Meital, 129. Passing Events; Agitaking for a Division of the Safter; The Taked-of Mining Kaveral, The Safter for Paled-of Mining Radie-Car for the Address of Harlines, 138. Undercurrents; The Reduction of Hallocar faces; Almisium, 138. In USTRATIONUS.—Fig. 1—Tilting Cal- in Upright Release; Mining Car in Upright Release; Mining Car in Upright Cal- in the Cal- in Cal- in

Valley, 181. Submarine Valley, 181. Submarine Valley, 181. Submarine 185.

California, 185.

Threaken the Oil Districter, The Philosophy of the Threaken the Oil Districter, The Philosophy of the Threaken the Oil Districter, The Philosophy of the Threaken the Composition of Marian Composition of Marian Composition of Submarian Composition (1994). The Science of the American Association of Submarian Composition (1994). The Composition of Submariant Composition (1994) and the Composition (1994).

cacce; Artificial clouds; The Depth of the Charleston Estimator of the Charleston Cartificial Clouds; The Depth of the Charleston Estimated I Set 1944.

MEGHANIOAL PROCHESS.—Temporer of The Participal Charles, 1845.

Mickel Sciel, More Ani, 1846.

Set 1961; Obvingered Molted Steel Tires, The Yababes Steel; Obvingered Molted Steel Tires, The Yababes The Variable Charles, 1846.

UNIPORMATION.—Buttons and Estimated Hartings and Estimated Moltes, 1846.

Description of Moltes, 1847.

Participal Charles, Medical Edition, 1847.

Coffee, Monto of Messing, 1845.

Coffee, Monto of Messing, 1845.

Coffee, Molted Edition, 1847.—Tempers of Monton, 1846.

Participal Company of Moltes of Molt

## Lusiness Announcements.

.sambloO gaising Oolumns. Perforated Sheet Metal-John W. Quick, Shorthand Taught-Miss M. G. Barrett,

## Passing Events.

and country homes. On all sides there seems to be an advance in values, showing that the resources of this State are becoming more boom. The inquiry seems to be mainly for outside tracts suitable for orchards, vineyards to troe a gaioneireque era seitunos abemaiA reached the bay counties, and Santa Clara and The advance in real estate which began in Telegraphs and estated in the state of th

this State is a very important thing for Califor-is. It will take effect very shortly, and will The reduction in railroad fares throughout thoroughly appreciated.

tuo ni benoitnem si tadw lo shistno noitsutis There is little to say concerning the mining .eldelisva ebam yam sand their few misguided followers may which have been more or less neglected will be communication, all those portions of California sid materially in settling up the vacant spaces of everywhere. With cheap and rapid means of

a good business basis. Most of the speculation row going on is in farming and outside lands, there being very little of it in the mining busitheir properties, and mining has settled down to raturp of T. weng mining the The quarks are mining developing mentaning developing and experience are seen and seed and

Eureka Con. mines yield \$150,000 in bullion monthly, and the latter will pay 12 25 cent monthly dividends in the ensuing year. Sarate Sevator Foleward the Richmond and

We give on this page as engraving of an un-dercertent such as is in use in the regions of California where bydraulic mining is still car-ried on. We take the engraving and descrip-tion from A. J. Bowie's excellent work on by-farallic mining.

Undercurrents,

### .munimulA

Its price ranges from 50 cents to \$1 per ... foil, fancy articles, fittings for traveling-bage, struments, druggists' weights, thimbles, spoons, received a new impulse a year or so ago, when an electric smelting company began operations in Obio. Aluminum itself is need for the lighter parts of mathematical and physical inin alloys, and particularly in aluminum bronze, case, in view of recent improvements in the methods of obtaining it. The use of aluminum e extensively used than has been the Iliw munimula restanted that eldadorq si Il

munimula to syolfs guidem to yaw blo edT

etisinper edt -imula to tunoma which is to push doing this, one of orbier. The facts referred to will shortly go can define the ordinary way of making allowed to the ordinary to the ordinary way of making allowed to the ordinary way of the o

bronze required, it to make the proper amount of copper is added to remelted and the asme time, which alloy is alterward per melted at the alloy with the copas smroi eeri tes munimuls edt bas mina is reduced, produced the alusund taad sanst Under the inrent is then passed. ered, and the curand properly covlined with charcoal doird-orf for eloct тигласе от тесерchine in a suitable namo-electric eve fulreword a lo the large electrodes and placed between corundum, is mixed with charcoal and granulated copper edt ni "(munimula betalunary to miot to obixo) saimule гре пем ргосезв alloyed with the melted copper. By ed bluos ti exol гд Бьосева пр чодие tained by the costminum had to be obquired, of course, that metallic alu-The old method rehold it submerged by means of a dry stick of hardwood. the melted copper in the oracible and пат домп through

of aioined aiv totals terouge a once thin yang gaied etar tanesard out, 03.2\$ ta otnomaron? From S.

another,. The rates referred to will shortly go will all be more or less benefited in one way or ities. The smaller towns throughout the State -lacol ynam ni bnal lo secirq edt ecnavba ot bna into consideration the rates on the smaller lines. The effect of all this will be to stimulate travel will be similar reductions in due course of time. The Railroad Commissioners will shortly take On the other railroad lines in the State there

The Reduction in Railroad Fares.

The general reduction in railroad fares in this State which will be shortly inaugurated, will

dale, 4 cents; Galt to Ione, 4 cents; Sacra-mento to Redding, via Marysville, 3 cents; Davis to Redding, via Willows, 3 cents; Redas follows: Stockton to Milton and Oak-

ern Pacific system, and they agreed to a reduc-tion of all 6-cent divisions on their lines to 5 sioner Abbott to the managers of the Southbeen restricted more or less. The proposition to reduce the fares was first made by Railroad Comand fevert bas Agid need evad seret eat tue which has occurred for years. There are now trailroads in all directions and more being built, do more to develop California than anything

4-oent divisions to 3 cents.
The reductions on the various divisions will ents per mile, 5-cent divisions to 4 cents, and

erimreg ydgargod b n a beggorb a Pamanaaux ( ely, and, if the toleiretem estado the grizzly clogs with gravel. The lown, If too low, stated as it wears ding to Coles, through the Sacramento canyon, ne inch below the sluice pavement, which urrent, are placed edgewise across the sluice. a set of such bars is called a "grizzly," It is number, according to the size of the under-Where a drop off can be made in the main line, parallel steel or iron hars, lx4 inches, with incervals of one inch between them, and 10 to 20 niam ent woled bas to ebis eft ta ebang wash terial, and thereby aid in saving the gold, underents are introduced into the eluice line.

These may be described as broad shnices set on trailic mining. In order to relieve the sluices of the finer ma-

SECTION OF SLUICE PLAN. DNIEWENT LEFT OUT TO SHOW FLOORING LONGITUDINAL SECTION A. B.

AN UNDERCURRENT FOR SAVING GOLD.

more than 30 years, but which did not have the cent, as the case may be. This method follows the line of older experiments which date back sonian Institute and as U. S. Fish Commis-4 cente; Sacramento to Auburn, 3 cente; Au- Mass., Aug. 18th. He was eminent as a writer containing 10 per cent of aluminum, or five per burn to Truckee, through snowsheds, where on natural history, as an officer of the Smith-

### Admission Day Proolamation.

WHEREAS, It has become the oustom to celetate, each year, the suriversary of the sedminsteion of the State of California into the MHEREAS, Dance, and WHEREAS, A large number of citizens have requested, in order that all persons may participate in the occasions, that such day be set mon to such occasions, that such day be set aside as a legal holiday.

Jown Experience, J. Washington Bartlett, dovernor of the State of California, by virtue of the State of California, by virtue of the State, do hereby appoint and laws of this State, do hereby appoint and declare friday, the ninth day of postern and laws of this State, do hereby appoint and canses therefore. I have bereunte set my hand and cansed the seal of the State to be here of the surface of the seal of the State to be here of cannot be and cansed the seal of the State to be hereunte saffixed this the 15th day of August, A. D. 1887.

A. D. 1887.

A. D. 1887.

A. D. 1887.

A. D. 1887. A. D. 1887. A. D. 1887. Acticat: W. C. Hendriches, Beoretary of State.

\$3 00 7 HE Daly mine, of 15 00 5 10 5 00 5 10 15 00 5 10 15 00 5 10 15 00 5 10 15 00 5 10 15 00 5 10 15 00 5 10 15 00 5 10 15 00 15 10 15 THE Daly mine, of Utah, produced thus far

> to Sacramento via Lathrop, 34 cents; via Bethere is no local traffic, 5 cents; San Francisco all roads round Los Angeles, 3 cents; Banning to Yums through the Colorado desert, where 3 cents; Newhall south to Banning, including via Tehachipi pase; Newball to Santa Barbara, burn to Truckee, through snowsheds, where there is no local traffic, 5 cents; Lathrop to Sumner, 3 cents; Sumner to Newhall, 4 cents, vis Tebeshini energy summer to Tewhall, 4 cents, vis Tebeshini energy and the Tebeshini

> Jose, Montercy and Templeton, 3 cents. This shows the entire system, excepting the line from Berends to Kaymond, a distance of 21 Miles, on which the local traffic is insignificant. On the Morthern division, San Francisco to San

mines, on which the foods traine is mighthosome, for the first of 10 ones per part per mile has been made, it being the highest within the State.

A list of some of the most important rates will enable our readers to appreciate she exmended the second of the reductions. They are as follows:

well the reductions.

 Truckee
 \$9 55

 Redding
 9 of 25

 Tebama
 7 zo

 Los Angeles
 21 7o

 Fresno
 7 6o

wide, the yield of the first undercurrent, which was 20 feet wide, was 20 per cent of the yield of all the undercurrents. An addition of ten feet to the width increased its yield to 27 per cent of the total, and the grizzly in the main sluice was not changed. more than that of a narrow one, except in the elight matter of pavement and cleaning up. At French Corral, with a tail alnice five feet

on si tnerrundenna e wide undercurrent is no the main sluice and grizzly, caused by the in-troduction of the latter into the sluice line. The

the undercurrent itself, but by the repairs on

cost of maintenance is occasioned, not by

of 12 inches in 12 feet, is sufficient; but with blocks the grade should be increased to 14 inches in 12 feet, and with cobbles to 16 inches in 12 feet, The gravel escaping from the underturent is led back to the main sluice. The property of the main sluice.

per cent, according to the smoothness of the rifles employed. It is paved with cobbles, wooden rails shod with etrap iron, or small wooden rails a grade a grade in the smooth rails a grade of the smooth rails a grade in the smooth rails a grade in the smooth rails and in the smooth rails and in the smooth rails a grade in the smooth rails and in the smooth rails are smooth rails and in the smooth rails and in t

d, and set on a grade of ight to ten

, an alq doni-bl

to ebem si mottoo sin sluice, The

edt to dtbiw er

ght to ten times eve, if possible,

binoda ti .dgi ong, with sides

ox, 20 to 50 feet vide, 40 to 50 feet

ent proper is a The undercur-

oward the lower

per cent grade, and grade, and gradually narrows

sea a two or three

the material over

etndirtsib ylasve ot

diw belivoid bus, boow to "arehivib"

Belddos diw beail This chute is nderourrent.

upper end of the to the chute at the

line. This box oar-ries the material

niam edt ot selgna tagir ta tos bar

20 inches deep, lined with blocks

gravel drops through the bars for a box about

picked ap again in slaices at a lower level. The fact

ndercurrent. the surface of the

пороом

MOILERI

THE Ontatio mine, Utah, produced during the first seven months of the year \$1,122,022.

recent accident on the Comstock has been distributed. It aggregated a little over \$30,000. THE relief fund subscribed shortly after the from large ordnance to small fancy articles

and for decorations, chandeliers, engine-bear-ings, journals, etc., and its proposed uses and those of other alloys of aluminum fill a long list,

price down to 40 cents, or 30 cents in quantities of a ton or more. Castings of sluminum baye bronze containing 10 per cent aluminum have reached a tensile strength of 110,000 pounds to the equate inch cross-section. Aluminum bronze is used for car and steamboat fixtures, and for decreations of pandollers, enounced for decreations of pandollers, enounced for decreations.

ranged from \$1 to \$1.75 per pound. In 1885 ti sti story and manufacture brought its

pounds. The market price of the bronze in 1884

1878. The amount of aluminum bronze manu-factured by the Cowles Co. in 1835 is stated by them to have been between 4000 and 5000

chines, and appears to be a successful advance on the experiments of Sir W. Siemens, begun in

advantage of the modern dynamo-electric ma-

## MECHANIGAL PROGRESS.

Tempering Taps and Other Small Tools.

CORRUCATES ROLLED STEEL TIEES.—An inBullyecked to rapid oxidation.
CORRUCATES ROLLED STEEL TIEES.—An ingenious and useful application of the principles
of corrugation has been made by Mr. William
Tox of the Leedes Forge Company, Leede, England. Mr. Fox has applied corrugation to the
manner. By the peculiar path described by the
tires of wheels for road traffic in a very simple
corrugations when revolving, the wheels are pretires of wheels for road traffic in a very simple
corrugations when revolving, the wheels are presolvented by the sides of the rails and they
also serve to effectually mount the inequalities
corrugations as the relations of the rails and they
also serve to effectually mount the inequality worn
diving up to it, which latter is frequently worn
beauth below the edges of the rails and they
all vehicles are liable to slide in crossing or
diving on or about tram lines, the effect being
to injure the wheels or seriously twist the cardiving on or about tram lines, no matter the
asile and dangerous. Fox's system of corrugated
triege, so as to render driving on such routes undriving on or about tram lines, no marter as
asile and dangerous. Fox's system of corrugated
driving on or about tram lines, no marter as
asile and aspectory be detected. The tree are as
any month and asy that the presence of the car
riske, so as to render driving to prerisk of scrident in driving they prestep plain tires, and besides obviseing the
wooden fellose of the wheels from being damrisk of scrident in driving they proceed by the curbatones when drawing up or
training corners.

THE YANKEE GOOVER is the name of an ingentorial describity presently patented, and solves
to decore the decorety the curbatones when drawing no vertorial decorety the curbatones when drawing on solves
to decore the decorety as the care as the contracts of the care
the decorety of the curbatones when drawing no vertorial decorety the curbatones by the name of an ingen-Tempering Tapa and other Small recording to the record of the series of Acceptance of the property of the process of the passes of the process of the pro steel, which is a sid to require no hardening, steel, which is said to require no hardening. It is composed of soft iron, nickel, marganese and terro-oyanide of possesium. The steel is and terro-oyanide of possesium. The steel is produced at one melting. After the iron and nickel are melting. After the winductes or its oxide, rogether with the fetro-oyanide of possesium, which the marganese with the other ingredients are melting and the reaction is taking for another ingredients are melting for a short time longer one pape, the mass is estirred with a red-hot rod of graphite, whereupon the short time longer continued. The alloy is then to be well melted and the stirring for a short time longer continued. The alloy is then to be well melted the melting for a short time longer continued. The alloy is then to be well melted even, being observed to paint the molds with even, being observed to paint the molds with to have them as free from all water of amonts, and to have them as from all as possible.

GHEAP ALTUMIUM.—Much attention is being given to improvement in the manufacture of all mine to improvement in the manufacture of all mine to improvement in the manufacture of all mine to improvement in the manufacture of the arts and every-day uses of life for which it is so peculiarly applicable. Mr. James Mace of the Gorlety of Chemical Industry in which is the Gorlety of Chemical Industry in which he contry amounted process for manufacturing coulty amounted process for manufacturing sodium and potassium cheapily. With caustic sodium and potassium cheapily. With caustic sodium and potassium cheapily. With caustic field and materials. With sodium costs about 25 cents a pound, allowing I7 cents for alloming in alloming ones and university of the metallic sodium costs and materials. With sodium at this price allominum can probably be put on the market at \$350. Speciario de grates de consequence is a sterior of the control of protection of the control of special of the control of Mechanical Improvements. THE SCIENCE OF THE BASENAL CHEVE.

THE SCIENCE OF THE BASENAL CHEVE.

When a ball (or in fact any missile) is advancing the practicity of it is a small aggregation of compressed air. (In pagingly through the air, there is formed in tront of it is amall aggregation of compressed air. (In pagingly through the air, that the compressed air in tront of an advancing cannon-ball best pagingly through the air is compressed air in tront of an advancing cannon-ball best pagingly and a state of the air is conical—or rather visible—by instantance properties of the ball best and therefore it cestes the progress of the ball state of the control spin of compression and therefore it cestes the progress of the ball state of the control spin of compression and therefore it cestes the progress of the ball spin of compression air cannot escape so readily as the case we have to consider, where the spin is advancing side of the spin is advancing side of the spin is accounted. The cannot escape so readily as it is decape amore readily than it would but for the advance of the cushion of sir spin is a spin ing the compression of compressed air formed by the action of compressed air cannot escape so readily as it toward that and removed from the other side of the spin is spin ing the counters and the cestion of the same thing the mass the other side. The same thing the mass half and the other side of the ball is advanced to the right of the the cushion of compression of massisms as a spin as the other. The same this is actorated from the region of the ball is advancing is not opposed on the other, the ball is advancing is not opposed on the other. The ball is advancing is not opposed on the other, the ball is advancing is not opposed on the other. The pall is a straight on or general to the other and the other, the ball is advancing it is deposed from the other. The pall is a straight of the other the other the other than a straight of the other the other than a straight of the other than a straig

The wood-worker seems to be detrived from most of the beneates that are not continuous. The jace place in wood worker seems to be derived from patent inventions. The jace place of the wood-worker seems to be derived from patent inventions. The jace place of the wooden can lever has taken the place of the wooden can lever has taken the place of the wooden with a fact one that the place of the wooden with a fact of the wooden with a fact one of the strendling deviced that the fact of the wooden with a fact of the wood with the wood will grind a place into against the own will grind a place into against the own will grind a place into a see with its own special to be strengly, to bring an even set the dige that the place into a series of the place into a series of the place into a series of the wood will see the series of the dige to the wood will see the series of the west drills have best working see they are kept in the own will and they are this the whet drills have best workings to barber. The will serie the latest ing the bardest of a suger bits in a serie kept in an one of the delights of the place of the strengly for iron work, but are now being drawn with, and they are thins to be well as the woods. They have thus a board writing the twist portion of the derices try to imitate the latest improved the two are the series and open sectings, and other as now being drawn wetter in roller bearings, and call now being drawn the goese-quill state; one drilted into the work the sections of the converting.

The tooking the series and writing pen seem to have the sides of the integer of the converting.

The tooking when the surface the latest improveting with the coller bearings, and clinted into the contains and the series and writing pen seem to be the work of the wood. The place of the converting to the converting of the wood work of the converting of the converting of the converting of the converting of th

THE DETH OF THE CHARLESTON EARTHOATEN.—Careful calculations in regard to the
phenomena of the Charleston sarthquake place
the depth of the central point of disturbance at
12 miles below the earth's surface. The calcuthe Napolutan arthograph of 1857, originated,
was the first attempt to solve such a problem.
When the depth of the depth of the Yokomen
was about five miles. The depth of the Yokomen
was about five miles. The depth of the Yokomen
was about five miles. The depth of the Sydona-MICKEL STEEL is being made by the Ferro Mickel Society of Paris, in the following man-

ARTHROGAL ChOUDS—SMOKE.—An exchange says that a thick of our ceenerly created for the protection of vines from frost at Pagny, for the protection of vines from frost at Pagny, on the Franco-Cerman frontier. Liquid saws ignited in tin boxes, and pieces of solid tar smoke strose and protected the vines (louds of smoke strose and protected the vines for two on the ground near the vines in the subghbrihood hours, Although vines in the neighborhood hours, Although vines in the neighborhood nucler the clouds were left uninjured. Of under the clouds were left uninjured. Of under the clouds were left uninjured. Of the trosts of the condition of the first in calm weather only in that white frosts occurr.

THE AMERICAN ASSOCIATION OF SCIENCE has just concluded its session in Mow York. A large number of valuable papers were read, to support of the concluded its session in Mow York. Which reference will be made hereafter in those columns. Following are the new officers for the gest in Washington, Provell, United States Geologist at Washington, Provell, Michelson, Cleveland, Astronomy, Prof. A. Michelson, Cleveland, York, Mechanical Science, Prof. Mondoworth, York, Mechanical Science, Prof. Mondoworth, Washington University, St. Louis, Geodworth, Washington University, St. Louis, Geodworth, St. Mechanical Science, Prof. Mondoworth, Washington University, St. Louis, Geodworth, Washington University, St. Louis, Geodworth, Washington University, St. Louis, Geolgist and Geography, Prof. Cook, Geologist, Rubers

ollorine, about 26 ounces, and fluorine, 3‡ ounces. Of the solids, tearbon stands at the beas of the metalloids, there being 48 pounds. Mext comes phosphorus, 26 ounces, and sun, 24 ounces. The most aboutes; and lastly, iron, 1½ ounces, and in the condition, more than three pounds; next potestion, 24 ounces, and in the safe, 15 election, 15 ounces, 15 is needless to say that the various combinations made by these 13 election, 15 ounces and in the safe particular than the safe almost innumerable.—Le Practicien, ments are almost innumerable.—Le Practicien. SCIENTIFIC PROGRESS.

**Pistricts?** Does Danger Thresten the Oil

placed several inches from the wall lest the building should take fire. The members might the observed carefully touching the pipes with their hands, and wondering why they did not feel warm. It is just as absurd to suppose that in the unavoidable absence of oxygen the fire can run down the smaller shaft, pass through the reservoir, and reach the larger boring. Should there be a junction between the wells, at a higher level than that at which the oil is eserceted, there would still be no danger, as the inability of the flames to extend further downward, owning to the rapid production of carbonic acid, gas, would effectually guard against any extensive communication of the flames. danger be as well known to scientists as the danger, be as well known to scientists as the danger be as well known to scientists as the slarmed correspondent asserts (he even property of serior of Congress to sake to said an extra session of Congress to take some action in the matter), it is strange that his reason, viz., the one well with dataght, pulled down into the earth the burning gas of a smaller well, resulting thus in explosion, should have been overlooked by an estimate the same as reminder of the time when Villiam Murdock made his discovery of comuse it is a reminder of the time when Villiam Murdock made his discovery of comparities are the House of Commons, the architect into the House of Commons, the architect into the House of Commons, the architect into the House of Commons, the architect pipes, and therefore insisted on their being placed several inches from the wall lest the placed several inches from The members might be obtained to the members might to be a building should take fire. The members might is a point of the property of parentyle propertyless with the construction of the members might to be a purifical propertyle and the propertyless and the propertyless and the propertyless and the members might to be a purifical propertyless and the propertyless and the propertyless and the propertyless and the members might to be a propertyless and the propertyless and the propertyless and the members and the propertyless and the members and the propertyless are propertyless and the propertyless and t a correspondent of the Cincinnati Commercial to those regions of our country which are occupied by gas wells. Briefly, his argument is this: Two hundred years ago there was just anoh a craze in China as we have in this country to-day. Wells were sunk in large and numbers; there were many of them large and quite near to each other. A gas explosion or curred that killed several millions and destroyed a large district. Lake Foo Chang, a large infared sea, at present cocupies the cavity. If this land sea, at present cocupies the cavity. If this danger be as well known to scientists as the danger be as well known to scientists as the Overwhelming disaster has been predicted by a correspondent of the Cincinnati Commercial

The Philosophy of the Kerosene Lamp.

The question is often asked: "Whence comes the unpleasant small samp?" A comes the unpleasant small true plants; "A comes the unpleasant small from the ask of the best oil that is decembered by the best oil that is decembered by the best oil that is under you can produce a gas in your house that is under you can produce a gas in your house that is under you can produce a gas in your house that is under you can produce a gas in your house that is under the state of the samples of is sold in perceptible door from any quality of il sold in perceptible door from any quality of il sold in the market. But there is no compute, and there is also a danger the wiek, when you light a lamb and it. This is done for economy in most instead and it. This is done for economy in most instead the wiek, with this supply established, there is any done in the same will not burned being volatilized through the stablished of oil its established through the stablished, we thus white to its decrease of lourning surface, the supply of oil contract of the copy of oil oil restablished we wiek, with this supply established, we thus with this supply established, we thus only the surface of constitution in the compact of the originary products of constitution in the farm of oil its established through the stried of the wiek, and a very little praction of the originary products of constitution, most of the rooper proper proportion of allow into the surface, in my opinion, is the chainsey, or is blown into it, as axplosions in the office, in one of the explosions of it can be will, it and the the the the true of the contract of the originary opinion, as and easiest and the contract of the originary opinion, as the casults of the will, the will the will the surface of the contract of the contra

THE CHEMICAL COMPOSITION OF MAN,—From a chemical point of view, man is composed of a chemical point of view, man is composed of 13 clements, of which the are gases and sight position of a man of the average weight of 154 pounds, we will find that he is composed in targe part of oxygen, which is man weighting large part of oxygen, which is a sease of oxygen, would see the own state of oxygen, which is at oxidinary temperature, teme compression. In fact, The hydrogen is would axceed 380 cubic feet, The hydrogen is much less in quantity, there being less than 15 pounds, but which, in a free state, would occupy a volume of 2800 cubic feet. The three cupy a volume of 1800 cubic feet. The three over a volume of 1800 cubic feet. The three of a volume of 1800 cubic feet. The three of your volume of 1800 cubic feet. The three of 1800 cubic feet. The three of 1800 cubic feet. The three of 1800 cubic feet.

A Wear O. A. A Birmingham form in making an an an arm in a naking ham is an a factor in the best an oar in which the blade is made from the best sheet steel, highly tempered. It is put forward as being much stronger than the ordinary wooden one, and sanot be broken without unrunning nearly the whole length of the blade and forming a sockbone of great strength. The and forming a backbone of great strength. The water clean wooden ones, enters and leaves the water clean wooden ones, enters and leaves the water clean any spruce, or sah, and it broken can be readily if yellowed.

THE YANKEE COOPER is the name of an ingenious device, recently peteried, which solves only only device frues hoope on tight be problem of "How to drive trues hoope on tight be done reputly and well, as extracts the manufacturer being thereby effected and the manufacturer being thereby effected and the manifest agreem of operating the machine will be readily of the machine will be readily on glancing at the cut. The driven understood on glancing at the cut. The driven and bear upon the hoop in 12 places to prevent the hoop from being driven on to the borrel and bear upon the hoop in 12 places to prevent the act of the iron in the hoop read as fromly as the strength of the iron in the hoop will allow. The devices for operating the driving at the machine, as well as to bring then the beart upon the hoops, are such that the work is performed and the machine, as well as to bring them to bear upon the hoops, are such that the work is performed and the predators. The machine is performed and the machine, as well as to bring them to bear the machine, as the strength of the interest of the proper formed with great repidity. The machine well allow. The machine weight seekers are such that the work is performed and the great repidity. The machine weight solve the beart of the proper formed with great repidity. The machine weight solve the Buffalo, N. Y. The machine weights 3000 ibs.

A NEW OAR.—A Birmingham firm is making and in graking and in a making and a making a making and a making

work to depths of missry and woe for lack of knowing where to apply? Are not the wares of
auflering humanity of vasely more importance
than a code of so-called schoes, orested in the
dark ages and still nursed by doctors who
believe that their own success depends upon
abrouding the practices of medicine in mysterry
There is a democracy of learning and of taste
abrouding the practices of medicine in mystery
There is a democracy of learning and of medical
and and the transition of the code of medical
are their respect at least, should be aboltown come when the all the broad the work
woner their missry oan be lightened, their
happiness restored. Those who lack the shifty
to beat will go to the wall—"the fittest will
to beat will go to the wall—"the fittest will
survive."

A TEST FOR MAINERIA,—A loving father who, at a summer resort last season, had left behind. The and left behind at a summer resort last season, had left behind father behind so that more as a summer resort last season, had left behind so the same as a summer where as if he had shot my little ones. "Sa, dear sir, but you, the gractian, ought to have been armed and equipped against on the little and equipped against a brother and another control of the season of the same should object. Take in the risk of each streem spirity of cases prewent the risk of each control object. Take in made before a landlord could object. Take in the dressing-bag an ounce vial of saturated so had dressing-bag an ounce vial of saturated so the dressing-bag an ounce vial of saturate and the dressing had been supplied. It it turns brown in an hour, it is, broadly speaking, until the drink; if not, it is, broadly speaking, until to ounty holds where the is supplied, it is then shown a county holds where a last season is contained to ones. In the season is confined to ouse, and near the water supply, take next train to a point farther on. These matters should force some last when their neglect should force some on one's presonal attention, quite some last the contained to occasion. These masters should force some on one's presonal attention, quite some of the sunch as the undertaker's bills that occasionally lollow their neglect.—American Magazine. By Secondary.

How Love Overcity. Protects.—By a vote of the German Parliament a commission was created in 1853 to consider and report upon the opiections to expend so consider and report vecination. This commission was a large one, vaccination. The following are some of the and included three prominent opponents of the conclusions given in its report as stated in the conclusions given in its report as stated in the tip of the conclusions given in the formatical that we have a spain and in different persons that in the mean it is about the my years the conclusions of the conclusions.

HINTS FOR THE SLEEPLESS,—Böward Everett Hale says: "Never go to bed in danger of being hungry. People are kept awake by hungry. People are kept awake by hungry. People are kept awake by hungry. Beople are kept awake by new decisione. Key codes which starts the whole system, deciline tea or whole starts the whole system, deciline tea or words of thing to bed. A void all makeomatics or intricate study of any kind in the last six hours. This is the stuff kind in the last six hours. This is the stuff while stuff is the stuff of any hungry our conscience clear. Remember that because the science of the six infinite you cannot do the whole of it is in any limited period of time, and therefore you may just as well leave off in one place fore you may just as well leave off in one place.

SMAKE HITES.—Just as quick as possible after being bitten by a snake, melt hog's lard and drink a teacoptul. Then take a white glass bottle and fill it with whisty, and hold it to the wound, when the green poison will exude into the whisky. Then apply fresh whisky, fapear the poison will study be removed. This is said to be an infallible curp for the bits on a rattleanake, Ohildren thus the bits of a rattleanake, Ohildren thus the bits of a rattleanake, Inhildren thus a case we should apply the whisky inwardly a case we should apply the whisky inwardly could avail as outwardly, and all that the patient could swallow.

FISH AS BRAIN TOOD.—Professor Atwood, in bin second article on 100ds in the June Century, devotes some pages in exploding and ridiculing devotes some pages in exploding and ridiculing fibe professor that mentals exertion consequently, fish is specially good brain, and that, on account of containing much phopporus. He denies that fish is peculiarly rich in phosphorus or blat there is any evidence that the brain or that there is any evidence that the brain or that the brain or that the present thought or that the proportion of phosphorus, or that there is any evidence that the brain or that the proportion of phosphorus, or that there is any evidence that the brain or that the proportion of phosphorus, or that the proportion of phosphorus, or that the proportion of phosphorus that or the proportion of proportion or the proportion of proportion or the proportion of phosphorus that or the proportion of proportion or the proportion of proportion or proportion or the proportion of proportion or the proportion or the proportion or the proportion of proportion or the proportion or the proportion or the proportion or the proportion of proportion or the proportion of the proportion or the proportion of the p

POISONING BY MUTMEG.—A case of poisoning by natine, Medical by natine, in which one autimed had been eaten hours, in which one autimed had been eaten him to become giddy, etupid, and very drowsy all next day. The narrowing properties of these seeds, and of others of the same natural order, do not appear to be generally known, and seem worthy of investigation.

and business real estate, etc., \$9,531,000,000; railroads and their equipments, \$5,536,000,000,000; household furniture, etc., \$5,000,000,000,000; etc., \$0,000,000,000; etc., \$0,000,000; etc., \$0,000,000; etc., \$0,000,000; etc., \$0,000; leaving \$3,052,666,666 for mucollaneous foors.

other pressure that the confirmation of a paper. At Vicana page and the confirmation of the confirmation o

The Spider As a Verther Improace.—In Connections the country folks have a weather indicator in the spider. Although the morning clouds may be threatening, if he spiceds his web cout to the briesse it shows that the prospects for a fair day are good. The "sign" is said for a fair day are good. The "sign" is said almost invariably to be correct.

Heavy Steam Hammers.—The beaviers steam hammer in the world is the 150-ton ham. Essen, At the Cockerell works, in Belgium, Liners is a 100-ton hammer built in 1885. These are the only ones 100 tons and over, Crensof is an 30-ton one.

POLISHING PASTE TO REMOYE RUST.—The following is giving as a recipe for a polishing paste that will followed surface: Cyanide of potastic find, 16 grammes; soap, 15 grammes; obalk, 30 grammes; water, aufficient to make a thick paste.

Some Queer Things are seen in the Veterinary Hospital of Philadelphia. Among them are a pig seasy chair, a padded cell for a lunation force, a Turkish bath, and a swinging harness in which a horse may live or die without bearing any weight on his lege.

LARREE BUNCH OF BANARAS,—Colonel Hearty Huss recently had shipped to him of Jergest brought to New York. The bunch of banas ever brought to New York. The bunch was four feet high, its weight 216 pounds, and many of the bananas were 16 pounds.

## GOOD MEALTH,

## Dangers to Health.

When will danger to health from sophistication stop? The example of the baker at Philation at the will danger to health from sophistication and it is delphia, who poisoned his two obilidren and his carbomers last week by covering his bans with most or lead in a case of saffron, will not other stom the stageing their cakes.

With distributes germs in our water, plaster of Paris in our bread, tyrofoxfoon in our milk, with distributes germs in our water, plaster of paris in our bread, tyrofoxfoon in our milk, plants in our bead, tyrofoxfoon in our milk, burned peas in our pork, our melons, burned peas in our office, pression our melons, burned peas in our office, it becomes a puzzle as to what to live our last it is almost as perplexing to line in our feat, it becomes a puzzle as to what to weat. The flashy aniline dyed and the stin; and now comes Mr. Joseph F. Geisler, official chemist to the New York Merican of the stin; and now comes Mr. Joseph F. Geisler, official chemist to the New York Merican entitle in the sweatband of hear strong poison of the stin; and now comes Mr. Joseph F. Geisler, official chemist to the New York Merican of the stin; and now comes attributes to be our found in the sweatband of hear force of hear, and the Board of Health. He has found the poisonous matter in his own hat, where a form, and the Board of Health. He has found the house of one of an atmosphere containing sulphiated when the found in the outer and the sweatband of sulphide of lead per square inch, or 2.446 poison of 18, 548 grains) for the entire sweatband of lead per square inch, or 2.446 poison of 18, 548 grains) for the entire sweatband of lead per square inch, or 2.446 poison of 18, 548 grains) for the entire sweatband of lead per square inch, or 2.446 poison of 18, 548 grains) for the entire sweatband of lead per square inch, or 2.446 poisons of 18, 548 grains) for the entire sweatband of 18, 548 grains) for the entire sweatband of 18, 548 grains of lead per square inch, or 2.446 poisons of 18, 548 grains) for the enti

EFFECTS OF COFFEE,—Coffee acts upon the brain as a suimulare, inciting it to increased activity and producing eleoplessuess; hence it is of great value as an antidote to narcotic poir sons it is also supposed to prevent too rapid way enter it is also supposed to prevent too rapid way enables it to support life on less food, way enables it to support life on less food, to a peculiar crystallizable mitrogenous principle, act of the plant place of the plant place. The leaves of the plant place, termed caffeine. The leaves of the plant place is and of Sumatra prefer an incomparint of the leaves to that of the berries. Its test causing the development of the volatile of the heat causing the development of the volatile oil and peat causing the development of the volatile oil and peat causing the development of the volatile oil and peculiar soid which gives aroms and fixor.

MEDICAL ETHICS.—The criticisms passed on members of the members of the members of the profession are, to say the least, exceedingly profession are, to say the least, exceedingly prosessing special ability pursue a course of this kind ability pursue a course of this kind should not any one possessing to the member of the me

breace spread out toward Hamboldt Bay as a broad and comparatively shallow plateau.

Two problems are at once auggested by these admanner walleys. Once a summarise tractione walleys. Once a summarise shelter Beam coasting vessels bound for Humboldt Bay, when they get as far north as Bhelter hay, when they get as far north as Bhelter hay, when they get as far north as Bhelter hay, when they get as far north as borer to force out they and then constinue parallel with the shore. One vessel has been lost by failing to find bottom that a rooky axis of the deep and no bottom. Had the extra of the deep and no bottom. Had the axis of the deep and no bottom. Had the very would have proceeded in a more guarded manner.

The second bearing which these great and north

The second bearing which these great sub-marine valleys have is upon the deep-sea faura, which must be brought close under the shores, the more especially as they bring in the colder waters coming down the coast outside of the influence of the close inshore eddy current to the northward.

## USEFUL INFORMATION.

BUTTOUS AND EAR-RINGS FROM BLOOD.—The world as moving rapidly in the direction of several seving of what is heretofore been considered by world as moving rapidly in the direction of seving of what is heretofore been considered waste material. Making buttons from blood seving of what is heretofore been considered the action of the beautiful of the seventh of the se

MENDAMENS, DEVICE.—The frequent and offen a paying one, and offen a paying offen, and offen fasts a condents occurring in machine shops from being caught by revolving shafts a shops from being caught by revolving shafts a prompted Mr. Robert F. Henney of the base prompted Mr. Robert F. Henney of the devise facetory at Mew Haven, Conn., to devise derectory at Mew Haven, Conn., to devise derectory at Mew Haven, Conn., to devise having a means whereby and near a consistent in a sense of an otherwise dangerous contact. He shaft in the s

MEW AUTOMATIC DEVICES,—An automatic box is abeing put up on the lamp-posts in Brooklyn to supply postage stamps, postal cards, a pencil, and postage stamps, postal cards, a pencil, and postal eltere are verlopes. At card, and postal eltere are postage at the solution of the day or night on going to one of any hour of the day or night on going to one of any hour of the day or night on going to one of the elemp to mail it, there will appear a postal card and pencil with which he day are like and merely wariten, if one has a letter sleamp to mail it, he and merely warite, if one has a letter stamp to mail it, he drops two penties in the box, at which as in the day, at which a sum of its early and its entire desker, and boxes in Brooklyn look like writing-desker, and lotter geometric action is a foot for dropping a coin over each drawer. There is a look for dropping a coin over each drawer. There is a look for dropping a coin over each drawer. When the proper coin drops in, it seeks in motion a bit of machinery which pushes out the action in itself.

Sabmarine Valleys of the Coast of

Academy of Sciences by George Davidson:
The plakeau of the Pacific Ocean reaches a door 50 miles of the Scauch to the Pacific Ocean reaches a door 50 miles of the coach to the control of the plateau of the Pacific Ocean reaches be deeply of 2000 to 2400 lethoms within as little of the blandcoinc. The descent to these protein of the couth of

gada, but where the arder of the state of th

Morthward of the Cape Mendocino and marked by Blunt's reef, strotons of Cape Mendocino, marked by Blunt's reef, strotones westward of the neal coast depths, and is a follows: Farms, \$10,197,000,000; residences

GRUB GULCH.—Cor. Fresno Kepublicans: About GRUB GULCH.—Cor. Fresno Kepublicans: About a year age the principal mine here changed hands a year age the principal mine here changed hands and our hopes went high, thinking we at last had the right man in the right place; but our hopes were stand our hopes were stated once more. Jow, the mine having best times Grub guich has ever seen. There is no best times Grub guich has ever seen. There is no best innes discount on our mines—the deeper they run the best innes a rule. On the Surprise and Jescophine mines a large force is being put on to better they are, as a rule. On the Surprise and Jescophine mines a large force is being put on to large they are, as a rule. On the Surprise and Jescophine mines a large of the best hand in position. A new and larger hoist is being put in, which is capable of raising under the property of the new so-stamp mill that is now in course of erection.

LAST CHANCE.— Kebubitcan, Aug. 20: D. R., MCK-cazie of the well-known Last Chance mine was more carrier of the well-known Last Chance mine was the town the well-known Last Chance mine was due to the county will develop wonderfully during the county of the county will develop wonderfully during George Hearst will put up a so-stamp mill, will turnishe employment to a large number of men, and other mines wall be developed and worked on an extensive scale. Extensive hotsting works will be put up at the mine of Lang & Co., on Decadwood, San up at the mine of Lang & Co., on Decadwood, San Will develop the mine 50 of the work is the present depth. Their mill is now worlding on good rook.

Last Chance work is in progress on a tunnel which will develop the mine 50 of the present depth. Their mill is now worlding on good rook.

### Fresno.

CLOSED DOWN.—Mountain Democrat, Aug., 300. The Crand Victory has shuffled over the weeks, of the control of the

BOOM IN COPPER.—Del Morte & Recoval, Aug. 30:
We understand that the Mineral Point Copper mine,
We understand that the Mineral Point Copper mine,
Big Flat mining district, Del Morte county, has
been relocated by Alex, Jacobus and others. They
been relocated by Alex, Jacobus and others. They
works erected on the lode, and the hills alive with
prospectors. An expect to scees emelting
works erected on the lode, and the hills alive with
prospectors. An expert is expect to sees emelting
works erected on the lode, and the hills alive with
and those strival work will fairly commence. The
corn have struck some very fine outcropping, the ore
being about Es per cent copper, with a small percentage of silver.

El Dorwal Mineral Porter

CLOSED DOWN.—Mountain Democrat, Aug. 30:

### Del Norte.

The Chlorination Works.—Angels Echos:

The work of building the chlorination works in this town is going on sedively. The main building is now in course of construction, and when completed will be the largest structure in the county. The dimensions of the building when completed will be the largest structure will be than the same and the county. The dispensions of the building when completed will be starton, and sheet sgrat, will be built at either end. Quite a large force of men are employed; but from general appearances it will require at least two months more to complete the work.

## Calayeras.

BUNKER HILL.—Amador Ledgev, Aug. so: The strike of a new ore body on the north drift at the Good for the or to refer the the Good for the or to refer the the Good for the or to refer the decent of a richer character than when first out. As it is parallel with the ore body which has pretetolore of a richer character than when first out. As it is morth and south, it is considered by lat the most north and south, it is considered by lat the most north and south, it is considered by lat the most and the prospects of a directed by lat the most sockholders are bright. The Cold Mountain, is ide to the south of water. They have some fine rock that is this mine, they have some fine to cold the mine of the prospects of a directed or a farted one profit is trock which ought to yield a brandsome Profit is trock which ought to yield a brandsome Profit is the men to save the gold. There is a much larger performance to getting the Wildman shaft in good order is all completed; the track has been put in to the borward of getting the Wildman shaft in good order is all completed; the track has been put in to the borward of getting the Wildman shaft in good order is common of the prospects are tavorable that a mill will be company has gent to Knight & Co, for estimates for a to-estamp of eight hours each. The Cold Mountain Co. at Oracia in the commenced in a short time. Sinking at the Oracia is a sport time. Sinking at the company has been at some order of an a short time. Sinking at the office of the prospects are tavorable that a mill will will hours each. The Cold Mountain Co. at Constant will be commenced at once. A commenced of the south of the conduct of the commenced of the south of the continuation of eight hours each. The Chalch of the conduct of the conduct of the commenced of the south of the conduct of the commenced of the structure of the commenced of the structure of the commenced of the south of the conduct of the commenced of the section of the commenced of the section of the commenced of the commenced of the comme

### CALIFORNIA.

The following is mostly condensed from journals published in the interior in proximity to the mines mentioned.

MINING SUMMARY.

Siekiyou.

Square Creek.—Cor. Shazia Democrat, Aug. so: Square Creek.—Cor. Shazia Democrat, Aug. so: Lass Saturday the ledge in the Uncle Sam mine was curly the lower tunnel. It was found to be four correspondent also had the pleasure of visiting the service with it a large per cent of sulphurets. Your correspondent also had the pleasure of visiting the mines, all it this camp. It found in the Black Bear, the Clipper and the Carson & Sonyder mines, all it this camp. It found in the Black Bear, about x1 feet wide, the ore carrying one and one-should be supply to the cent of itch sulphurets, and much of it milliball per cent of itch sulphurets, and much of it milliball per cent of itch sulphurets, and much of it milliball per cent of itch sulphurets, and much of it milliball per cent of itch sulphurets, and much of it milliball per cent of itch sulphurets, and much of it milliball per cent of itch sulphurets, and much of it milliball per cent of itch sulphurets, and will certainly sulphuret of the carson percease in the cump of the four, it of Square Creek mines are rapidly coming to the front, and will certainly sulphuret. All per coming to the front, and will certainly suit the reputation assistance.

Siskiyou.

### Shasta.

The New Mill. Burnerdino.

The New Mill. Burnerdino.

The New Mill. Burner,—Calico Print, Ang. ociock, while the employes were at supper, and a colock, while the employes were at supper, and a colock, while the employes were at supper, and a lew minutes elter the night watchman had commenced his duties of watching the present of the company, he reading a paper, and beheld the starting sight of the company, he reading a paper, and beheld the starting sight of the company, he reading a paper, and beheld the starting sight of the company, he caringuish the fire, but it burned so rapidly and needs to the build-fire starting the starting sight of the company, he caringuish the fire, but it burned so rapidly and fleeredy that his efforts were the vain. There was not certificate, while the employes made every whole structure, while the employes made every conflicting and the starting siderably if not irreparably damaged. Nearly all buildings, no other buildings, and most siderably if not irreparably damaged. Nearly all made been cert in place, and it is a monthly time the company will be the boiler. The total loss is estimated batterned are cert in place, and it is a monthly time the thought that the offer mill which was a size of the company and the company and the starting. It is significant that the only machinery is a setting the size of the mail will be the boiler. The total loss is estimated and in the size of the company and an injury to the camp. Whether the mill will be the boiler to the company and the size of the company and an injury to the camp. Whether the mill will be the boiler to the company and an injury to the camp. Whether the mill will be the boiler to the company and an injury to the camp. Whether the mill will be the beat and the size is a serion of the discourse of the size of the s

### San Bernardino.

Ban Diego.

JULIAN MOTES.—Julian Sentital, Aug. 23; There is an unusual interest manifested by our mining men.
Experts are daily examining our old mines and work has already commenced on some of them for their redevelopment. Col. & C. Bestie, a practical mine on Theeday. The Ella has a good record and we now have the best of reasons for expension of the surface of the best of treasons for expecting redevelopment of her vast riches. We are not one of the surface of the wilcox has purious of Lake valuational that E. L. Wilcox has priceded the Ruby mine in Banner of A. D. Monnee of Lake valuations of the surface of the pay wilcox of the cock richer. They want begge grows widet and the rock richer. They want comprement for the work out at the Strongwall, for no more men for top work out at the Strong and Blue has commenced active work in the Strong and Blue has commenced active work in the Strong and Blue accommenced active work in the Strong and Blue lay mines.

## San Diego.

Los Angeletes.

COAL,—Cor, Los Angeles Times, Aug. 20: The coal mines in Santiago canyon need to be systematically desired and a fast used to to the fuel used among the rambers is from the same source. Croppings upon the same source. Croppings upon the sufface in the tot of the fuel used among the rambers is from the same source. Croppings upon the sufface in the fast vicinity, and the place is save say of sceess, as good roads with fair grades lead tom there to all parts of the vailey.

look is good.

Ar Machow Lake.—Truckee Kepubitem, Ang. ac. Judge Durater, upon his return from Mesdow Mars being the property of the statement of the moved and as entire new plant put in. Dr. A. P. Whittel is on the ground in charge and is very san moved and as entire new plant put in. Dr. A. P. Whittel is on the ground in charge and is very san moved and as the ground in charge and is very san. The machinery put in last season has all been ready for milling.

New Mining mount of rich one on the dump New Mining Direct.—Foolist! Trianger on the dump of the statement of the state

again as a gold-producer. Saturday evening pieces of root foek from a new ledge were brought to own. It is thickly threaded with authbruners mixed with galena and black jack and presents a very "lively" aspearand and pieces for a not state of the root and present working the and state of the root and present working the same of several profits and doubless prove the over to run close to 5150 per ton. The ledge upon which the mires and or sould quartz and doubless prove the over the root of the root being the conting for the coor, the new ore body was found, but the footbruce is a small clay seam through the footbruce of the root seems of the coor in the facts of the root first present the footbruce of the root seems from the seed of the root first present the footbruce of the fight of the drift. The Morth Earth of high-grade ore will be encountered a few feet be one of the root first present end of the drift. The Morth Earth of high-grade to a file footward in the drift. The Morth Earth of high-graded to an inderstand the purchase is about to be made, and we understand the purchase is about to be made, inclined to believe that the everal versent and we understand the purchase is about to be made, as one inner the morthly pay-roll aggregated 544,000,000 to the work was about on the season of the season o

COLORS FROM THE MINES.—Yieks Union, Aug.

GOOD ORE.—Foothill Traings, Aug. so: The mained district will surely come to the front from the from the

ANDES.—Good progress is making in the work of aning out and opening up the 350 and 400 levels. west researed on the 240 level is still in fine-lying quarts.

and porphyry,

DALTHAORE.—Muob good ore is being taken out to yoo level. A considerable amount of ore is now on the dump, on which the mill will presently be started. The mill is in good order, and can be started, The mill is in good order, and can be started up at a day's notice.

BULLION,—Good headway is making in the cleaning out and retimbering of the old Buchanan shalf. Are drifting both east and west on the 30o.

The rock formation is unchanged.

The rock formation is unchanged.

ALTA:—Ore is being extracted for crushing on the Yacfeweller on the Kutchersnown the Cast and wise shalf is in the winner on the Keystone vein, below the 7×5 level, with begin. As soon as water is brought to the completed. As soon as water is brought to the will begin. As far as can be seen the old timbering in the shalf is intact.

HEST AND BELCHER.—In the south diff from west crosscut No. 4 (from the main north lateral diff), on the 800 level, quartz is encountered that gives low assays. The north drift, on the 1300 level is in a vein formation consisting principally of clay and porphyry.

As and porphyry.

As ALTMORE—Much good ore is being 18ken out

SAVAGE.—Enterprise, Aug. so: At the 400 [svel of the shaft, a new station is being opened, East roscout No. 1 on the 500 [evel of the shaft, a new station is being to be on 100 [svel of the showing bunches of good ore. On the 600 [evel are driving south from the west drift from the station. The drift is in a body of low-grade quarts.

VELLOW JACKERT.—Repairs to the main shaft are continued. The drift to connect with the Imperial shaft on the troo level is going shead as fast as musele and powder can send it. Through it will be musele and powder can send it. Through it will be benefere and about a proper and a shaft of the Confedence and Challenge and also in the Jacket. Ore bodies are the great Jacket fire in April, 1869, fire great Jacket fire in April, 1869,

CROWN POINT.—On the 400 level No, I east crown water-min is progressing sapidity.

CROWN POINT.—On the 400 level No, I east crossout is again in ore, No, 3 is also showing fine crossout is again in ore, No ever 300 level food or length base now peen opened, and the vein seems growing in strength as followed southward, The same ore body has been cut on the 400 level, and is being opened up in the east vein on the 400 level, and a sation is being opened to cut it at a further depth of 100 level.

the same.

Cov, CALIFORNIA AND VIRGUIAL—Winze No.

Ton the 1400 level is still in good ore. On the 1435

west crossout No. 2 from south drift No. 2 is shown
ments continue well, and arre yielding the usual
amount of good milling ore. On the 1600, 1650,

and 1700 revels are drifting and doing other work
for the reopening of the old stopes.

CHOLLAR.—On the 1300 level, crosscut Nos. 5

The resting the class of the old stopes.

CHOLLAR.—On the 1300 level, crosscut bine. Good progressis and 6 are resting the class, of crosscut will shortly
be started near the Norcross south ince. Good progressis making in the work of cleaning out and reverse in the Norcross south ince. Good progressis making in the work of cleaning out and reverse is making in the work of cleaning out and reverse is making in the work of cleaning out and retribe to the still sprogressing spalidy.

Ago levels. The work of putting machinery into
the new waster-mill is progressing rapidly.

CROWN POINT.—On the 400 level No. 1 east

Washoe District.

Iowa.—Have opened up the lower McBee tunnel (which has remained closed by a cave since 1860) a distance of 650 feet, and are putting up a small distance of 650 feet, and are putting up a small bluedently the cource of the float rock upon, which is evidently the cource of the float rock upon, which is evidently the cource of the float rock upon, which is evidently the cource of the float rock upon, which is evidently the cource of the float rock upon, which is evidently the cource of the float rock upon, which is evidently the cource of the float rock upon, which is evidently the cource of the float rock upon, which is evidently the cource of the float rock upon, which are with a float cource of the float rock upon, which are well as the concentrates to the rection to the rection to the rection to the cource of the cource of the concentrates to the cource of the concentrates to the cource of the cource of the concentrates to the cource of the float of the cource of

### Washoe District. MEAVDY.

LOWER TRINITY TUNNEL.—W. S. Fowler, supply more power.

Superintendent of the Lower Trinity tunnel, reports assertations of the Lower Trinity tunnel, reports assertations progress on the work. The iniet, which is go feet at the entrance, is nearly minished and will be entirely completed by next Monday. At either extremity of the tunnel double shifts are working night and day; at the lower end 85 feet of tunnel, is little doubt but that the enterprise will be finished by the rat of January, as stipulated by the contract.

Trinity.

Trinity.

ANOTHER FINE CLEMUP.—Journal, Aug. 20:

ANOTHER FINE CLEMUP.—Journal, Aug. 20:

Mr. W. J. Leavit brought into town this week ryr

ounces of gold as the result of crushing 50 tons of

quartz from the Enterprise mine in the East Fork

quartz from the Enterprise mine in the East Fork

outcroppings on the surface, and was very rich

Die enewas taken from the surface, and was very rich

but the ansatra will be run, however, till winter rains

but the areatra will be run, however, till winter rains

Lower Trinity Trunker.—W. S. Fowler,

Mr. Daggett is employing a large number of men mand in which is employing a large number of men manner. Heglet Brother and Aldrich, on Humbug, are crutching good ore from their extensive mine, and their are species as success. The content mill has proved a success. The confidence of the county and extending into Oregon, are being developed by and extending into Oregon, are being developed by pects are encouraging. Solar the prosession of the gound of Oregon as the perior gold when the county processes are encouraging. Solar the prosession of the South Jorge and very rich gold-bearing ledge on the South Jorge and very rich gold-bearing ledge of the prosession of the South Jorge and very rich gold-bearing ledge of Bames and very rich gold-bearing ledge of the south Jorke of Salmon. It is regarded by man price paid was \$85,000 and conting the Capter of Salmon. The James Keane by Albert Ball of Canton, Obio. The James Keane by Albert Ball of Canton, Obio. The James Keane by Albert Ball of Canton, Obio. The James House are milited to the season of the Theorem of the South Jorge House of the Theorem Jorge and was \$85,000 and considering the extent of the both of the season of the South Jorge series as a most income to the working on a large scale. Jud. Haight and Lee, Miller recently a large scale. Jud. Haight and Lee, Miller recently alarge and the machinery for working on strong series are milliance of took they obtained \$300.

From the pounds of took they obtained \$300.

Trinity.—Jowned \$300.

Tracestora District.

BELLE ISLE—Times-Keview, Aug. so: Fair progress has been made in line crosscut, 150-600 level. Rock continues hard. District north from same has been extended eight feet.

"Mavajo.—Crosscut No. 2 from east vein, 250-600 feet, has been advanced seven feet. Drifts north and south on west lateral vein have been extended a total distance of 32 feet in high-grade ore. Town Treasure.—Water continues to retard work. Gangway, 160-1601 level, has been advanced to retard to retard the seven feet. The stranger in the face week. The stringer in the face holes of the seven feet during the week. The stringer in the face the seven feet during the week. The stringer in the face holes encouraging. Some good ore is being saved.

### Tuscarora District.

Mose District.

Work Resumed.—Esmeralda News, Aug. 20:
Work was resumed on the Monitesl mine, Mose employed, John Warner has two men at work on the Arrow mine. About 15 fons of ore has been extracted: The ore is considered to be of very good quality.

BEGINNING OPERATIONS.—Walker Lake Bulker Lake Bulker In, Aug. so. Harry Somerwille left Hawhorne on the first of this month to begin operations in Globe District, Mye county, Work bas already comparing the first of this month to begin operations in Globe first of this month to begin operations in Globe marked to the same case on a group of mines in which he is interested with R. Kelly and Dr. Laws. The mines are intuited about a miles from Luning, and balk a mile east of Luning and Downeyville stage toad a mile feet. A start has been sunk on one of these claims to a depth of 40 feet, showing the ledge to claims to a depth of 40 feet, showing the ledge to three miles, and on mines assigned from two to of oddlars as ton. The country is smooth and sleep free miling gold ores, some toeks showing contact the miling and assigned to the same case assigned from 12 for other than the mines. There is a large belt of timber within the mines. There is a large belt of timber within the operation for the carrier of the mines. There is a large belt of timber within the mines. There is a large belt of timber within the mines, and convenience and of these necessities making connected this disease the miling and reduction possible. No mining economical mining end reduction passing nears, all of whom freely declare assigned to the same of the country will soon witness a mining section. We have the country will soon witness a mining section.

Moss Distanced the sent of the same over the case in this section. yet been seen in this section.

### Globe District.

tions certainly go to show that it is valuable.

PROSPECTING.—Motwithstanding the many disadvantages prospectors are forced to contend with advantages prospectors are forced to contend with Jy prospected. With but few exceptions, have men in Hawthorne district, the hills are being thorough. By prospected, With but few exceptions, have men for the work on claims, in that district without taken from the worked a lot of ore or bave a quantity on the dump worked a lot of ore or bave a quantity on the dump worked a lot of ore or bave a quantity on the dump worked a lot of ore or bave a quantity on the dump worked a lot of ore or bave a quantity on the dump first work, the proceeds of which were about \$75, ore to Dayton to be worked, the returns from which or to Dayton to be worked, the returns from which or to Dayton to be secretained. He reaumed work on his mine yesteraday, and thinks when the dump of the proceeds of the ore will be greatly increased, that the great of the same class of the same class of the proceeds.

The Pamiroo.—Esmeralda News, Aug. so: On Ducaday morning Syl. Light, foreman of the Pam. Thursday morning Syl. Light, foreman of the Pam. Thursday morning Syl. Light, foreman of the Pam. Ducaday morning Syl. Light, foreman of the Ducaday of the commence the work of prospecting, to the mine to one of the buildings and didings a boardings and lodging ones, it is the intention of the company to remove one of the buildings now at the Lapanes and put it fore of the amilior ground. This mine, so far as worked, has proved a good property. As soon as worked, has proved a good property. As soon as former of the mine is put in good working shape the present force of miners will be increased. The owners of ince of the property leet confident that it is the best investing a miner in Hawhorne faithule, and the present indications are also and the present indications of the property leet on show that it its valuable.

PROSPECTING.—Motwithstanding, the many distinction of the present indications and the present indications.

SILVER HILL—Ermanda, Neur, Aug. 20: The SILVER HILL—Ermanda, Neur, Aug. 20: The Silver Hill mill, at Aurora, closed down leat Saturday Gor repairs. It will be started up again in a few days. The Silver Hill Mining Company has been days. The Silver Hill Mining Company has been days. The Silver Hill Mining Company has been days. It will enter being now employed. The mine, with plenty of ore in sight, will furnish sufficient ore to plenty of ore in sight, will furnish sufficient ore to the Mawaborne District.

Haw withoune District.

HER PAMLICO.—Ermeruda News, Aug. 20: On

### Aurora District.

MEXICAN,-A north drift is being run on the

Descrite Science, The north drift on the 785 level is showing more quarty than at last report.

Excheques.—The east crosscuts on the 182 level show no change of formation.

DPHR.—Good progress is making in winze No. 1, below the 1300 level.

I, below the 1300 level.

MEXICAN.—A north drift is being run on the

SEGREGATED BELCHER,—The drift on the 1300 level of Belcher is now about entering Segregated Belcher ground, BELCHER,—Are drifting on the 500 and 600 levels to tap the ore bodies found in the Crown Point.

face is in vein porphyry.

Unton Consolinated, of ward into ground the igo level is being pushed forward into ground in interior unexplored,

bitherto unexplored,

Portosi.—Good headway is making in the crosscure, on the 350 and 450 levels, in ground of a very promising appearance.

Occidental and prospecting work is progressing work is seen olivanges of formation.

Gould And Curray.—Work is progressing on the age in or changes of formation.

There are no changes of formation.

There are no changes of formation.

There are no changes of formation.

HALE AND MORCROSS.—On the 1300 level in east crosscut Mo. 1, have begun sinking a winze on the ore body disclosed in running the crosscut.

SCORPION.—On the goo level the east drift is now out a distance of 650 feet from the shaft. The face is in vein porphyry.

UNION CONSOLIDATED.—The northeast drift on

PARK CITTY NOTES,—British gold, silver and lead property; it is a promising gold, silver and lead property it is a featured from Kingston, Hillsboro and Lake Valley, He reports that the Hillsboro and informed our reporter that the Camper Eagle was one of nees. Others undeveloped site as good or these, others undeveloped site as with the control of the Billips works during the month of July. 1887, was 25s cons of high-grade building. The Three Lilies and the Georgis Belle building. This Three Lilies and the Georgis Belle are working eleatily, and ore is being pasked prepared to the Pueblo district, owned by L. J. McCullough, A. T. Slewart and J. O'Kear, while agreed over the passesses a good ore body. Work will be resumed from thin agreement of the Billips working the Slady of the Slady bas returned from Kingston, camps booming, and inst the Reports that the Caledonia is sold for \$100,000; that the Templat is camps booming, and inst the Slady has returned that the Hillsboro and Lake Valley. He reports the slad the slady of the Slady o

### HATU.

MINES TRIBUTARY TO SPORANE FALLS.—Oveother distructs in Idaho there are a number of imother distructs in Idaho there are a number of imother distructs in Idaho there are a number of importent in Idaho there are a number of imthal are geographically and commercially tributary
to the city of Spokane Falls. As they have an imlast are geographically and commercially tributary
to the city of Spokane Falls. As they have an imextensive reduction works will be put up here for
treating much of the ore from these districts, as,
extensive reduction works will be put up here for
the Metaline, the Colville and the Kettle River, all
the Metaline, the Colville and the Kettle River, all
the Metaline, the Colville and the Kettle River, all
the Metaline, the Colville and the Kettle River, all
footaning allow processing the treasporter of ore or various kinds,
sind all modern to drive all the machinery of Mew
and sufficient to drive all the machinery of Mew
and sufficient to drive all the machinery of Mew
and sufficient to drive all the distributing point for N
from the year. It is fulled with
and all modern conveniences. Its postoffice handles
decirtle lights, gas works, arect casts, water works
and sufficient to drive all the machine for the
of \$1,000,000 per year. Its fourting-mills have a
capacity of 600 barrels daily, and its breweries tooo
of \$1,000,000 per year. Its fourting-mills have a
capacity of 600 barrels daily, and its breweries tooo
or year.
Its fourting the west its hour from foot,
and \$1,000,000 or year.
Its fourting mills have a
sald \$1,000,000 or year.
Its fourting mills have a
sald \$1,000,000 or year.
Its fourting mills diver only property \$300 per from toot,
the past year.

### WASHINGTON.

pished.

Acce Creek District.—Many mines on which development work is being done are looking better than ever. More prospectors are in the district than start previous time, and forest City is satisfied in the appearance of a verifable mining camp. Arrangements are now being made for the camp. Arrangements are now being made for the building of a wagen-orad from the valley to Forest one over which to build a passable road, and the and cover which to build a passable road, and the and the area of the outlet of the ord, which is distance of 7 miles. The people of the work can easily be accomplished with a force of men and teams in a couple of weeks. The people of the work can easily be accomplished with a force of men and the property of the minets of the camp completed before the minetal minetal

OARL STRIKE,—Sentinel, Aug. ao: In Sani's Valley, a fine vein of coal 4 feet in width has been discovered 14 feet from the surface, in the bottom of a well. It has been tried by blacksmiths and produced at feet from the surface, in the bottom of a well. It has been tried by blacksmiths and proceed 14 feet from the surface, in the bottom of the committee City, on Dixic creek, are the Keystone. It will be a to-stamp Colorado mines. A new quarter, small is now wenty erected on the Keystone. It will be a to-stamp creek of the returns from made for the adding of the creek of the corrected on the Keystone. It will be a to-stamp of the center and the creek of the surface of the creek of the surface of the creek of the creek of the surface of the creek of the surface of the country previous time. The center define of the surface of the country previous time. The center define of the surface of the country where capital has steadily prospected, and the country when we cannot expect any great activity in mining proper and the country of the country where capital has steadily prospected, and the country has a surface of the country where we cannot expect any great are made of the country belong the country and the continuance of the now splendid inclosed for the surface of the now splendid inclosured. The surface of the country plants of the creative of the country well we cannot get an only belied.

### OFEGON.

as reorganized is called the Silver Mining Co. cf. Lake Valley. The boisting machinery for the freedeed has a dealer or the beet state of the Silver Mining Co. the beet bas at last hoen received, and shipments from there are to be made ere long. A 37-foot vein from there are to be made ere long. A 37-foot vein of good bay ore bas been struck in the Tendertoot at Malone. The property is owned by a St. Louis of good bay ore basecock, and the mill is being preperty and the mill is being green time. Work has again peling from the Peacock, and the mill is being to peling from the Peacock, and the mill is being to being done on the Peacock, and the mill is being to being done on the Peacock, and the mile is the camp the Copher one of the spread time for the same the Copher one of the spread time for the same of the property of the part of the mine is under lease by W. How dearly of the mine is under lease by W. How dearly the part of the mine is under lease by W. H. Newcomb; the balance is owned by Dan Coompact on the Silver King at Beld mountain, and now work on the Silver King at Beld mountain, and now work on the Silver King at Beld mountain, and now with in the Pennayl-vent in the Pennayl-vent of the mine is under lease by W. Hey years been donie as well-dome. The Pennayl-vent is the considerable and now with in the Pennayl-vent in the celeboment work is being they are not herefore a sufficient quantity of good shipping one dear on one, a sufficient quantity of good shipping one dear on one, as authicient quantity of good shipping one has not heretolore been discovered to make the mine of has more heretone been discovered to make the considerable and same of the page of the sufficient duantity of good shipping the has not heretolore been discovered to make the considerable was more the sufficient quantity of good shipping the has not heretolore been discovered to make the considerable was the considerable was

integrated by the course, the middle of Uctobar, the full capacity of the plant was supposed to be fast of next month or the middle of Uctobar, the full capacity of the plant here will be 2500 tons per full capacity of the plant here will be 2500 tons per full capacity of the plant here will be 2500 tons be an iron mine was located about 28, mise southests an iron mine was located about 28, mise southests an iron mine the full capacity of the plant plant in the several circumstances in the several circumstances in the several circumstances in the several circumstances in turnaces, and the full capacity of the country of the coun Co. let a contract for sooo brick, which it was supposed were to be used in the construction of turning based were to be used in the construction of turning unassive stone flower works. Since them, work on the works at the lower works is but stoned to the forest beautiful to have a state of the progress is that reported in the Analysis of the progress is that reported in the Analysis of the progress is that reported in the Analysis of the progress is that reported in the Analysis of the progress is that reported in the Analysis of the progress is that sets at sit as the work at the enwaster that a fact is and the office stem at the coundations for the new amelier building, tos by 350 for the new angles building, to the office the progress of the passiver kind. Rock that he would under wealt. The converge of the passiver kind is the detricks and beater of the the water there will give building its taken several hundred feet along the hill give building is taken several hundred feet along the hill give building its taken several hundred feet along the hill give building is taken several hundred feet along the hill give building its taken several hundred feet along the situation is declered in about two weeks, and it he water the building it is along the situation of the middle of Colobe hill give building to cars of one per day at the colobe-like precision. When the middle of Uciober, the full that the plant here will be soo tone per day at the plant between the middle of Uciober, the day.

FIRE-CLAY.—In 1885 what was supposed to be an item about two weaks of the plant here will be soo tone per the middle of Uciober, the day.

GOOD OUTLOOK.—Rio Grande Republican, Aug.

19: Rich strikes have recently been made at Dolores, Kingston, Golden, Slver City and Chloride.

19: Rich strikes have recently been made at Doloride, Allogether, the mining industries of I/we Mexicon never looked brighter than at present. Prospectors are being made by Eastern capitalists.—Over too are tooked brighter than at the serior to the serior of the serio

NEW MEXICO.

### .ANATNOM

ANAPLING BY MACHINERY.—Ketchum Keystone, Aug. 33. The sampling of one will now be carried on by automatic machinery, and it is claimed the plan of he man by automatic machinery, and it is claimed the plan of he man demanding the plan of he man demanding the plan of he machinery used and the plan of he machinery used and the percess aid not meet with the most stalisfactory the plan of the plan of the process of not meet with the most stalisfactory plan of the plan of the

### IDAHO,

SOME MINING STATISTICS.—Mining Industry; Adjusting Active Statistics and before an emergency or each day, a gain of shout too stamps in the past month. There are about too stamps in the past month. There are about too stamps in the bast month. There are about too stamps in the bast constantly at work, and several hundred more which tun occasionally. It is safe to say the stamps are curshing as were feet as the daily not the folial tonnage treated in the state the the state of the forms of ore some stamps are curshing as neversee of tago forms of ore stamps are curshing the total tonnage treated in the state state of the forms of one or monthly and the state of the forms of of the state, according to the forms of the state, according to the forms of the forms of the state, according to the forms of the forms of the forms of the forms of the state, according to the forms of the for

OMEGA.—Three shifts were put to work this week an OMEGA.—Three shifts were put to work this week sainking, and a new shalt was started on the ledge cast of the main shalt. A station will be cut out at too lest aba de athlic sharted. Shikings is progressing at the rate of about three feet a day. Ote of good quality is being taken out.

At BISHEE.—Two stacks are in full blast on Copper Queen or a stacks are in full blast on Copper Office of Company is making many per Queen ore. The cut of the cast at reading-room and hall for meetings is in contemplation, and electric lights will soon be added. The stream wagon is making successfull traps daily, hauting the many stacks are to so to contemplation, and electric lights will soon be added. The stream wagon is making successfull traps daily, hauting the may started up three weeks ago, and has been mine was started up three weeks ago, and has been found during the first week. The old whims were found during the first week. The old whims were to shall shall be to the canyon, and the daily shipment of ore down to the canyon, and the daily shipment of ore will soon begin.

Alargeovers, which a will the warrants aucoess, have properly with a wall the telegrated from the traction tag-foot shalf, and shipped to Socorro. This property, which is owned by fred Austin, post tracts at Fort Lowell; Capic Whitesides of the army, and the beirs of the Whitesides of the narry, and the beirs of the Williams, which is a warrant and the being the world the being a warrant and the produced in that time about \$10,000. It likes in an excellent location, and deserves thorough development,

being removed from Asis canyon, in the Huachucess. The main shalt, soo feet deep, is being streightened up and made double compartment, and will be sunk to water as rapidly as possible, in order to furnish the necessary supply for the mill. The hoisting works are on the way and pumps have been ordered. The new owners are going to work upon this value, and provided the provided that will the amount and the provided that the

OLD GUARD,—A large force of men is at work appropriate for their mill, which is Adountarn, Aug. 19; Some time ago the Angconda

TOMESTONE DISTRICT.—Epitoph, Aug. 19; The Grand Central mine, after a long test, caused by the desirent on of the worke by fite, is again about to be about to about to the about to about to about to the about to about about to about about to about a

PIASIKA, Stawer Alabam, Aug. 6: R, J. Sawyer Bitch Assave,—Alabam, Aug. 6: R, J. Sawyer and seasyed some so samples of quarts taken out of different claims located in the neighborhood of Sitka. The ore yields per ton from \$1\$ up to \$100 in 120 old different claims located in the neighborhood of Sitka. A distandance of water shape of sitya. A distandance of water shape of sitya. A distandance of water shape, of some recognition of the same proceed of water shape, of some recognition of a same shape of some recognition of the same shape of some recognition of Victoria and themee to San Society has and pure of operation of Victoria and themee of San and the more of water shape of the same state of the same same shape with the same same property. The same same same same same same same with the last of days, some of then good propertone one toof. There have been evental sales of mine one toof. There have been sender a law and the months, as they have not much not of a more of the surper under the world. It will have say some of the largest mill not one toof. There have been senders a law distance of more of the same and have not samp wery much, as they have not much of a mine of the same of more of the surper under the world. It will be the same same way far much of a mine. There have been senders a law and says ago with an 80-stamp will, to be put up on the Alaska Union Mill and Mining Co.'s and have no water to no un their mill, even if they had an ine. There have been sender of a mine. There have been sender wery nich strikes are not water to on water to up the the mill went. There have been sender wery nich strikes are angewents to put up one more large stampemill and willing the said to be a stock-jobbing stranger and have an under the large of one of the mill they had mill and will an the Mexican tunners, and they are making at angewents of the same maker in the Mexican tunners, and they are making wear and greater that the same same wery rich strikes are the same some very rich strikes and greate maker in the ANOZIAA.

## ANSALA.

WORTH BELLE ISLE,—No. I crosscut, 300-foot NORTH BELLE ISLE,—No. I crosscut, socsett states and seed; total length, 58 feet. There is nothing special to note in these feet. There is nothing special to note in these occasecuts, except the similarity of the formation and mineralized seame characteristics enmineralized seames to the level above. In mineralized seames to the level above, in mineralized seames to the level above. In Applied to the crosscuts on the level above. In Mineralized seames to the consistence of the continues rich.

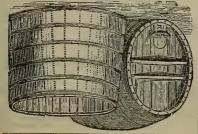
(old workings) for air.

Commower. H.H.—During the week shaft has been such 8 feet in very lavorable looking porphyry.

West genms of mineral and a slight increase of water. West gengway 900-loot level has been advanced to feet. The formation passed through the year week shows considerable mineral.

NEVADA QUEEN.—No. I dirll, 300-loot level in west ledge, has been extended to feet. The vein west ledge, has been extended to feet. The vein how, a fuffl from west gengway on the west ledge, has been extended to feet. The vein to so a directed during the west gengway on the west ledge. The vein foot a during the west gengway on the west ledge. The vein shows full, so week, has been driven four feet. The vein shows full, as well as No. 1 dirll, the ore being rich. No. 1 winze on east vein has been sunk to feet, to let a see well as the continues to show well me to the continues to show well.

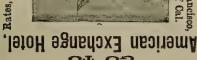
crosseut on the 300-foot level has been extended 13 level level and connection made with the 300-foot level old workings) for air,



FULDA BROS., Proprietors, 30 to 40 Spear St., San Francisco CALIFORNIA WINE COOPERAGE C

ALL KINDS OF CASKS, TANKS, Etc.

GO TO



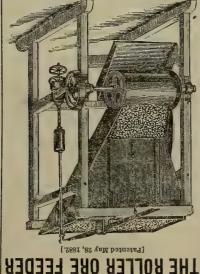
One door from I per & \$1.5 Coach. San Francisc m Bank of Cal.

The above Hotel is situated in the midst of the Bank-ing and Commercial Houses of the city, and is by far the most home-like and desirable Hotel to stop at, MONTGOMERY, Prop'rs.

FOR SALE CHEAP. MACHINE SHOP AND FOUNDRY

B. STANDISH, Fverything in complete running order; eituated in kinting kown of feridle, on the direct railroad Orgon; will be sold at a sacrifice, as the owner wishes retire from dustiness. For further particulars, addres

This paper is printed with Ink Manufac-tured by Charles Eneu Johnson & Uo., 500 South 10th 3t., Philadelphia. Branch Offi-ces 47 Bose 3t., New York and 40 La Salie 3t., Obicsgo. Agent for the Pacific Cosst-At., Obicsgo. Gridiey, Ual.



iment than any other. Feeds coarse over is simpler uniformly, under one or all the stamps in a batte uived.

Golden State and Miners' Iron Works.

Sole Manufacturers, Sar Francisco, Oal

SAW COMPANY N. W. SPAULDING



inds made to order, Send for Descriptive Cat. I and 19 Fremont St., San Francisco

E8 81.01 R44 CHIZEL BIT Inserted Tooth SPAULDING'S Manufacturers of

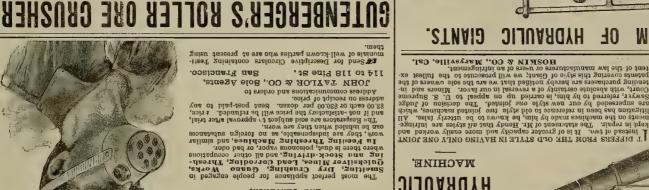
SAW MILLS AND MACHINERY

and Salivation. Entirely Prevents Lead Poisoning

LIFE-SAVING RESPIRATOR

Saws

LNHLVA



HYDBAULIC

IMPROVED This cut represents our

HYDRAULIC 0E **FORM** 

And will furnish descriptive Catalogues and copies of Testimonial Letters, and will quote prices upon application.

"CHALLENGE," "STANFORD," "TULLOCK," or "ROLLER" FEEDERS,

И. W. Скоскек, Supt. Bunker Hill Gold Min- In. C. Wіскнам, Тауlor Mine, Greenwood, Cal. W. Скоскек, Greenwood, El Dorado Co., Cal. ing Co., Amador City, Cal.
 W. Экоскек, Supt. Bunker Gold Mine. Ing Co., Amador City, Cal.

The est form of Feeder ever devised, and prononneed by reputable mining men to be far anperior to any form of "Roller" Feeder manufactured. We refer to the following gentlemen who have furnished us with testimonial letters to the showed are with the second of the seco

"OHALLENGE," IMPROVED ORE FEEDER.

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL. 102HOA HENDY MACHINE WORKS,



cation to JOSHUA HENDY MACHINE WORKS, 39 to 51 Fremont St., San Francisco, Cal. Toe above cut Harterfee be AIMPROVED TO ROMY.
The above cut Harterfee be AIMPROVED ROMY.
The above cut Harterfee be AIMPROVED ROMY.
The All aimilier styles are intringenents upon this form, and s judgment stande of record to that effect,
decision of Judge Sawyer of the U. S. Circuit Court in the matter of Heady and Fisher vs. R. Hoskin et ali
AEP Reuse Uninsbed upon spylitation to

PERFECT PULLEYS

First Premium Awarded at Mechanics' Fair, 1884.

Medart Patent Wronght Rim Pulley Sole Licensed Menufacturers of the

For the States of California, Overgon and Stavenda, and feb Carricotaes of Indato, Washington

Best Balanced Pul. 3y in the World. Also Manufacturers of

Best Balanced Pul. 3y in the World. Also Manufacturers of

HANGERS AND APPURTENANCES

SHOW THE CONTRACT OF THE CONTR

Nos. 129 & 181 Fremont Street, .1881 ,35 .TOO .TAT

DEWEY & CO., { Mo. 260 MARKET St. } PATENT AGENTS.

SAN FRANCISCO,

96 Liberty St., New York.

Motion or Pat, Improved Friction.

1, 2, or 4 Drums, with Reversible Link

**LOB WINES** 

ENCINES

Secremento Foundry, Cor. N and Front Sts.
And hintingement on the mill will be proscuted to the full ex-

TOT'ES TOTE STATE TOTES OF THE STATES.

WEIGHT, 4 TONS.

It is a full fledged Quarkz Miltout gearings, cope or pulleys.

Power applied direct. Works Ore at Low Cost Works (Work Ittle frecton. Beats other machines in reducing and amalgemeting ore, and costs less. All who have used this mill iterating ore, and costs less. All who have used this mill low cost of working.

W. GOTENBERGER,

Jow cost of working.

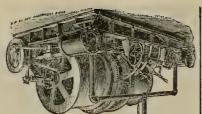
Jow cos

Crush 8 to 10 Tons per Day.

PARKE, LACY & CO. PACIFIC COAST AGENTS,



HOISTING



Metallurgy and Ores.

SMELTING and LEAD CO. **SETBA** 

416 Montgomery St., San Francisco.

And Assay Office, COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, .... MANUPAOTURIRIS OF ....

LEAD PIPE, SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

CHEMICAL APPARATUS AND CHEMICALS, DRUG CHEMICAL APPARATUS AND CHEMICALS, DRUG

pilotation.

"Total diel and Silver Tables, showing the value power of the computation of sagary in graines, and value power of the computation of sagary in grains and framman tree upon application. Regard, false for the sagary of the computation of Silver Pagents for the page the page of the sagary of the computation of the sagary of t

Nevada Metailurgical Works.

NO. 28 STEVENSON STREET,

Mear First and Market Streets, S. F.

С. А. LUCKHARDT, Manager.

Ores worked by any Process. Ores Sampled,

Assaying in all its Branches. Analyses of Ores, Minerals, Waters, etc.

Working Tests (practical) Made, Plans and Specifications furnished for the

Mines; Plans and Reports furnished. o anoitanimaxA of biag noitnestia laised& nost suitable Process for Working Ores.

O. A. LUCKHARDT & CO., Mulnus & Luckhardt, )

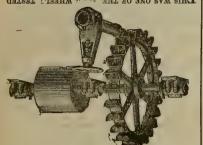
METALLURGICAL **MORKS** 

818 Pine St. (Basement,

Ores Sampled and Assayed, and Tests made by my

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOLK WHEELS TESTED A by the lebto Company be Chess velley, Cal., and stroubers and guaranteed estimates.

A partial of the proposed estimates, and guaranteed estimates.

Actual of the proposed estimates, and guaranteed estimates.

San Francisco, Cal.

268 Market St., M. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin gopper and brass. L. PETERSON, MODEL MAKER, INVENTORS, TAKE NOTICE!

> QUARTZ MILL. Hantington Centrifugal

SEUD FOR GATALOGUE TO

COBNISH BOLLS,

11GS and TROMMELS

FRASER & CHALMERS,

**ENCINES AND BOILERS.** 

This Mill as a Crushor and Pul-vericer is without rival. Is in operation in lead-

STURTEVANT MILL.

earow gaislems gai

SEND FOR CATALOGUE AND TENTILORIALS.

**ENCINE2** 

CORNIZA

PUMPING MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

HOIZLING

ENCINES'

HALLIDIE'S

or 110 Liberty St., Mew York.

MIKE ROPE

TRAMWAYS.

MEXICO OFFICE: No. 11 Oalle de Juarez, Ohlhushus, Mexico. DENVER OFFICE: No. 248 Eighteenth Street, Denver, Colorado.

GENERAL OFFICE AND WORKS: Fulton and Union Streets, Chicago, III.

NEW YORK OFFICE:
Room 48, No. 3 Wall Street.

'SAMDA

MACHINERY,

UTAH OFFICE-SALT LAKE CITY, UTAH.



COLD MINERS

Quartz, Gravel and Placer Mines!

**DMITAMADJAMA** PLATES Silver-Plated

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL PROCESS KNOWN FOR SAVING GOLD.

Over 3000 Orders Filled.

Fifteen Medals Awarded.

FRASER & CHALMERS, General Agents, Obicago, Ill., and Denver, Col

JAMES LEFFEL & CO.,

JAMES LEFFEL'S

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates-can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

653 and 666 Mission ST., San Francisco, Cal., E. G. Denniston, Proprietor, E. G. Denniston, Proprietor,

NOTICE.—My Silver-Plated Plates are well known and used everywhere. They have proved superior to all others in durability and weight of Silver.

THOMAS PRICE'S ASSAY OFFICE,

BULLION ROOMS and ORE FLOORS, CHEMICAL LABORATORY,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder, Ores Received on Consignment, Sampled, Assayed, and Disposed

> ETC., ETC. **VZZYYERS, CHEMISTS,** MINEBALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

will be grad to send free by mail, postage paid, to any one who will apply.

Also a kew teatogue of Books on Bicefro-Metallurg, and Metal Working, Molitag, Founding, texteen-Making and Metal Working, pages, 5wo, and our offer Catalogues and circumsts, bre pages, 5wo, and our offer Catalogues and circumsts, bre pages, 5wo, and our offer Catalogues and circumsts, bre pages, 5wo, and our offer of pages of the sent free, and there of postage, to any one in any part of the world who will intuish bis address.

HENNEY CARREY BARIED & CO., Intuitively 18 of 18

Industrial Publishers, Booksellers, and Importers,

810 Walnut St., Philadelphia, Pa., U., S. A.

### MINING SHYKEHOLDERS' DIRECTORY

309 Montgomery St	Burris	1, SI 350 UK	ZD. AUR 13, Sept	".ZC., BDGV9VL	O W S	sabur						
ва этовляв 026		4. 5 Sept 22	0.00July 26 Sep	I 6 signofilsO	M Co							
PLACE OF BUSINES	SECRETARY.	LING'NT, SALE,	FW, L' TEALED' DE	LOCATION, NO. A	PANY: V	COM						
ASSESSMENTS.												
S. F. JOURNALS.	PRESS AND OTHER	AND SOIRNTIPIO	SEMBALS IN PLINING	AY PROM ADVERTIE	цвр вукку Тнокво	awor						
	TATO TOPTATA	C 0075										

gt Lint	atgomery St	THE SECTION OF THE PROPERTY.	C SHOMIA	Silver King M Co
SS SuA	on Comery St			Russel Reduction & M Co.
GI 1qA	negomety at	Letts Oliver 328 Mc	AN "EDBARN"	Paradise Valley M Co
g adegg	sole Pine St.	TOSHIA LI	AL. BDBV9VI	Eureka Con M Co
91 VBM		AV GCZGIDZZ IMC	T SIRIOINSU	Derbee Blue Gravel M Co
Y Kint	ntgomery St	W Havens 309 M	W. BINEVOY.	Con California & Va M C
ara and men				MAME OF COMPANY,
	THREE MONTHS.	DENDS-MILHIN	LATEST DIVI	
I aged	Phelan Block Ann	Whitmore	AA	трвсв Сов М Со
	rant Avenue Ann		Tabavavav	Slue Jacket M Co
d tqod lan	nakAbu	TAT GOC SERGISSES AL	sinforma	SOOKET COD IN CO
d dqəğlan	gansome StAn	Z2. HOSDRC	A BIDTOILIBO	Srush Creek G M & M Co.
ages leu	dark And St		A sinronnia	Truold G & S M Co
	Gonsome St Ann			Alaska M Co
TING DAIT:				
ante premi			-	MAME OF COMPANY,
	HELD,	EETINGS TO BE	TIXT	
is vienteganom ecc	Sept I7 D Buck	08 2nA72 Viut61	CRIMOTHRO	Venus M Co
38 gramograoM ees	Sept 29. A H Fish	., EI Just . OI Buch cz	Nevada., Z.,	OU M E MOU ASTU
R YISMONTOM 808	. Oct 19 J Scoville	10. Aug 22. Sept 28.	Mevadat.	Trogan M Co.
38 VISMIOSJAIOM 608	səmləH H M., ez BuA.	6 >uA 7 Vlut03	88,. BDBv9 M	Savage Mt Co
320 Samsome St	. Sept 19, F It Berier	3u gu A dl vlu C 44		San Francisco Copper M.
309 Mon gomery St	Oct II. E L Parker	Zb. Aug, 18. Bebt Zi.	Nevada	Sierra Mevada M Co
48 vienoganoM 908	Oct 20O E Ellingte	50 Aug 22 Sept 30	Nevada	Potosi M Oo.
309 Montgomery St	Oct 6,. J J Scoville	.di 3ged Ci 3u.A., Ot	.,Zsbsvavl	Phil Sheridan Con M Co.
328 Montgomery 86	Sept 13. W L Oli er	el and Il vinc 30	Y BHONITA	Pinal Con M Co
is viemogiuoM 908	Oct 3., E B Holmes	50 Ang 10., Sept 13.	Mevada	Ophir S M Co
t8 signolifeO elb	TE bleitbete L., 8 tqed	. 91 2u A 61 Viu C 80	Meyada. 2.	Orleans Con M Co
330 Pine St	.Sept 30. F E Luty	It yuk Is yint Ot	Меуада,	Original Keyetone S M C
48 ViemogianoM but	Ook 4 CD Cole	.El dqeE Il guA	I BDRYS M	N Ex Utah M Co
is vismonthont 825	Sept 23 J Morizio	25 Aug 1 Sept 2	Calmonia37	Maydower G M Co
8 eniT 088	nitodabli & L08 gr A	Il SuA d vint di		Morning Star M Co
48 vrsmoatnoM 906	Aug 300 E Ell ott	01 20 A d viul ds	486beveN,	Mexi. an G & S M Co
S vromogano M 905	Aug 31 J F Lightner	0f guA.,7 vwc0d	Meyada94	Hale & Moreross M Co
S vremoginoM SSc	Oct 10, T Wetzel	el 1498 31 guh 10	Calitornia 3	Gray Eagle M Co
nibling aslad T	Sept 26. W J Gleason	.2 dask .28 Vlut00.0	L Ol ciurotifo	Golden Fleece M Co
369 Montgomery St	Sept 6. CE Elliott.	.31 3uA 3 vint 02		Exchequer M Co
8 vramontacia els	Oct 18. C E Elliott	, es das se au A uc	62. BbsveV	Chollar M Co
is vieworthold 823	Sept 2. W B Lake	.df guA &! viut 80		Cataract & Wide West G
8 vismogadola 202		.e 2uA 8 viutoI	California 25	Champion M Co
B onist use	miodeO J. IS 4qeS	31 3uA 7 VIUC 02	S signotils D	Bulwer Con M Co.
8 viemog noM 605	Sept 29. D M Kent	8 4q98 2 guA cs	#f. girrolifsD.	Baker Divide M Co
S ani TSE	Oct 3. R Grayson	. di sued. Li gua od		Bodie Con M Co.
B ViemozinoM 208				Alpha Con M Co
S West Montgomery St	Oct 12. B Burris	.b doO42 240d	Nevada	OD M & sabatA
is emeared org	approximately and an arranged and arranged arran	.00.00July 26Sept 20	or aboved	OD M Sasha A
- 2000				
LIVOR OR BUSINES	'NT, SALE, SECRETARY,	FW. i. TEALED' DEFINE	LOOM NOITAGOL	COMPANY

## PACIFIC COAST WEATHER FOR THE WEEK,

.91U 8918	EXPLANATION.—CL for clear; Cy., cloudy; Fr., tair; Fy., toggy; — indicates too small to messure. Temperature. Wind and weakler at 13:00 M. (Foolio Stendard time), with emount of elutall in the preceding SA hours. I indicates																							
		1	T.				00,	1	1	1	[00]	l l	1	1	00,	1	1	1	100	1	1	7	100.	Total
'IO	W	99	00*	CJ'	M	08	00"	.TI	M S	19	00.	O.	ALS	92	00.	GI	8	06	00	Sy.	ŒΝ	E 29	00	Wednesday
'IO	M	89	00.	QT	45	28	00°	Q3	WB	99	00.	CF	M S	08	00.	GT	8	06	00.	87	WW	89	00 .	Luesday
CI"	AA S	04	00°	CI.	M S	96	00°	1O	M	99	00°	ξH	MS	06	90.	OF.	N	86	00.	.yg	MN	72	00	VabuoM
cr	WB	94	00.	GF	WB	Z6	00°	TO	WS	04	00.	·γH	MN	88	00°	GF	N	96	00	เอ	MN	72	00.	Yabang
'IO	MN	94	T.	CI.	М	06	00°	CI	ME	02	00.	.VH	w W	98	001	ar	N	96	00	ar	MM	02	00,	Saturday
Oy.	ME	22	00*	GF.	.41	88	00.	to.	M.	TZ	00"	Hy.	MΝ	ŦŔ	00*	GI	N	<b>2</b> 6	00'	.va	SE	22	00-	Friday
ar	WS	0.2	00.	TO.	W	₹8	00.	'to	М	69	001	GF	WW	08	00.	CT.	BE.	06	00.	CZ.	М	89	00	vaberndT
-	$\overline{\cdot}$		=	-	=	<del></del>	一	_	-	-		_		<del>-</del> -	-	-		<del></del>	-			-	<u> </u>	
Her.	÷			ber.	1			her.		:		her.	-	:		ner.		-		her,		1		42.81 .zuA
Weather	pu.	Temp.	Rain.	Weathe	Wind	Temp.	Rain.	Weathe	Wind	Temp	Rain.	Weath	Wind	Temp	Rain.	Weathe	Wind	Тепар	Rain.	Weathe	Wind	Temp	Rain.	
*	M	ığ	E	A	*	Ĕ	24	*	₽	Ĕ	R	W	A	Ĭ.	2	M	<b>M</b>	Te	R	≰	A	Ĕ	PH .	DATE,
02	ere	l m	82	tea:	σRe	A E	Γιο	.001	JCIE	rer.	1.8	·ogt	ner	1810	sec	.TI	nia	peg ]	ਬ	ď,	ជនរ	Ort	đ	e ole
[Farmlahed for publication in this paper by Melson Gorom, Sergeant Signal Service Corps, U. S. ▲ ]																								

		корапкиот	y F	8. F. Stoo			
пi	Sales	Highest	and	Lowest	10	able	I

UU U		30 0		1/1/ 0		3 00	U0 0	Lornouted auth
03.8	00.7	32. T		62.7	00*4	09.7		Сопиденсе
00.0	06.4	09.9	00.3	16.5	62.6	89	06.6	Сродяг
**.*	****	11.1	**		** *		****	Champion
DZ.20	00.6	GI.2	01,2	***		09.2	04.g	Challenge
7LT	#9T			76I	78T	16T		obite[[ed]]
							£71	Con, Va. & Cal
061	08	OT I	06	1 12	281	06		Вигмет
								Bodie Tunnel
26°2	2,30	06.2	01,2	00.2	06°I	66. I	08,1	TO STITLE OF THE
06.I	04.1	00.2	08,1	00.2		07.2	****	Bodie Con
06.	991	00 T	ce.	07'I	91"1		01.1	Belle Isle
1.10		82.I		J'30	1.20		OT T	Baltimore
1.45		7.90	09'1		08.1		36.1	
								Toillist
3.9	67,6			32.7	89	89	00 9	Best & Belcher
32.	02,			0≱.	38.			Brophy
0.7	00,6	67,7	29	67.7	97.0	00.8	6.25	Belcher
ε.	GZ.*	08.	62.	08.		CP.	****	Argenta
JI'T	1.00	98°T	GI'T	CF. L	981)	CC'T	CZ T	Andes
2.2	06.1		2,10		01.3		OT . 7	AJLA
00 F		GE.₽		32.4			01 6	
00 V	3 00	25 h	26 F	=6 P		0p.4	96 P	Alvha
					a			
.25.			gu.A.		2nV		gu A	COMPANY.
DNIC	ENI		ENI.	ING	END	DNI	EVID	~
30505	AA F	স গ	T AA T	37.57	AA T		AL Y	SO WEIGHT

87.5 81.1 88.1 84.1 88.1 88.1 88.1 88.1 

91 92 02 92 92 90 92 9 09 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 92 9 00 9 92 9 00 92 9 00 92 9 00 92 9 00 92 00.8 20.4 82.8 87.4 87.8 £8 58 00.8 \$6 \$7 92.1 02.1 02.1 04.1 .... 04.1 28.1 \$7 87.6 \$6 87.9 08.3 \$9 87.9 \$\frac{1}{2}\text{ (9 \cdot 9 \cdot 9 \cdot 1 \cdot 6 \cdot 6

It is rumored that a new plant for the reduction of base ores will soon be started in the LX L District, Churchill county. 33. 87. 07. 08 
 00.8
 \$\frac{4}{3}\$
 03.8
 03.7
 \$\frac{4}{3}T\$
 \$\frac{8}{3}\$
 00.7
 00.8
 \$\frac{6}{3}\$
 00.8
 \$\frac{6}{3}\$
 00.7
 \$\frac{6}{3}T\$
 \$\frac{6}T\$

LARGE DAY Will be celebrated in this city on September 5th, LAST week's mineral exports from Salt Lake City were 13 cars bullion, 293,545 pounds; SC cars caper orper orper or, 73,700 pounds; total, 42 cars, 1,-25,625 pounds.

> DREDAY Aug. 25, 1887. | 300 Justice. Sales at San Francisco Stock Exchange.

g1	Ken	A TUO			
Vеllоw Jаскет4.60		509		թվա Ն	TOD
CZ.IdatU	- 09	Sp. p	Nor	Hale & 1	200
Union Con 3.10	091	0p.p	VIIII	Gould &	250
ogo, natorT	1.0₹	62.1	191	Exchequ	098
Silver Hill asville	COT	7		Confide	50
Sierra Mevada 3 40	100	1700)27	tuio	Crown 1	004
Savage	330				
Peetless 1.2)	07	Egolg			
Ca)08 4 isoto I	482	04.2		Benton	007
Peer.,,70c	101	508		Bulwer.	OUL
Overman,		oce	91	Baltimo	COL
\$300kgxindO	072	§9*****		Belcher	095
Меу, Queen4.10	1650	32. I		Bullion	0 <del>1</del> 70
OS.I OLBVBN	09	9	tcher	B. & Be	092
00.9 4.00	00	0GP		Atlantic	300
Op. I ono M	100	7.I.		Andes	100
Mexican	300	00.Z		Alta	0%

### Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms o anhorson, and give it their own patronage, and, soription, and give it their own patronage, and, in circulating the journal, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 s year. Extra copies mailed for 10 cents, if ordered soon enough. If already a cents, if ordered soon enough. If already a subscriber, please show the paper to others.

### Don't Fail to Write,

Should this paper be received by any subscriber who does not want it, or drawing the state of state of the st

Governor Barterr is quite seriously ill, at

## San Francisco Metal Market.

-	441 (1	Flasks, old	а	
-	(a) h		п	
_	(g) g	Flasks, new I' 0	а	
	@ (	ObsA0 Gask	1	
09	900	d d	ı	
99	9 0 0	LINELATE—CORE	1	
ŧΪ	@ 0	Naylor & Co.	1	
9	(D) (F)	Machinery Co.	ı	
ě	00) 64	Plow wold	ı	
-	@ Z .	Black Diamond, ordinary sizes	1	
97	æ) g		H	
20	Ø i		H	
	@ 0	Buck, & bag 2 0	ı	
-	Ø 0	Shot, discount to an one has seen to anticosts, and	ı	
	Ø 0	Sheet, discount 10% on 500 bag Drop, # bag. I g	ı	
		Dist	ı	
99			ı	
_	Ø 0	February 210 Care Care Care Care Care Care Care Care	ı	
	<b>@</b> 0	Shotts, No. 135 0	ı	
	@ 0		ı	
00	0 (623	Oregon Pig, ton. 21 o	l	
00	0EB) -	Kglinton, ton American Soit, No, I, ton	ı	
09	6330 -	- Kelinton, ton.	ı	
90	- (935	IRON-Glengarnock ton	ı	
IZ	(b) 6	Fire Box Sheets	ı	
ISF	(D) \$7	Ingut	ı	
~~	<b>20</b> 6		ı	
12	(a) 6	Eoft.	ı	
	- "	Соррек—	ı	
Eg.	@) G	ATMREOSEMIA	П	
8	@) # Z	ANTIMONY—French StarBernsrdinoBorax—San Bernsrdino	П	
_	@ 16	AUTIMONY-French Star	ı	
- ,	SST 'CZ	THURSDAY, Aug.	ı	
-	2001 36 214 214 214 214			

## New York Metal Market. Sincet, 7x3 ft, 7 to 10 fb, less the cask..... 6.00 9

Telegraphic advices dated Ang. 26. h give the following Mew York prizes:

Bake Huver—946c per oz.

Gorgers—18. oz.

Gorgers—1

## Mining Share Market.

Mining stocks are down to bedrock prices, everything later to be drock prices, bowever, the prices of stocks seem to bear very little bowever, the prices of stocks seem to bear very little instanting the Vitginia Midwarts, specking of refereent. The Vitginia Midwarts, specking of see stock mines, are showing up more ore than for many years, is at each wing up more ore than for many years, is at each wing up more ore than for many years, is at each wing up more ore than for many years, is at each wing up more ore than for many pears, is a freet used known to the hashest can be commanded. Potosia, Morross and Savage that can be commanded by the first of the profits of the militage and prospecting much ore has been been in the companies are militage and prospecting much ore has been profits of the militage to fore and other temple starting up of the milits, and other companies are in the same fix.

If Gold Hill the Crown Point and other leading the mines can take out great quantities of ore as short mines can take out great quantities of ore as short mines can take out great quantities of ore as short mines can take out great quantities of ore as short mines can take out great quantities of ore as short more.

mines can take out great quantities of ore at short not can take out great quantities. The manipulators may manipulate for a time, but this ore must soon come out of the mines, and when it does it will get on top of all the manipulators."

## Bullion Shipments.

We quote shipments since our last, and shall be pleased to receive further reports:

Germania, Aug. 16, 54967; Bluebird, 19, \$19, 584;

Moulton, 19, \$17,905. Germania, 12, \$18561; Alice, 19, \$14,000; Germania, 19, \$1947; Bluebird, 10, \$1947; Bluebird, 10, \$1947; Bluebird, 10, \$1845; Bannock, 20, \$1500; \$21,456; Bluebird, 10, \$15,648; Bannock, 20, \$1500; \$21,450; Bluebird, 10, \$15,648; Bannock, 20, \$1500; Weelk Weelk Bluebird, 10, \$15,648; Bannock, 20, \$1500; Weelk Weelk Bluebird, 10, \$15,648; Bannock, 20, \$1500; \$1000; \$1

"De man wor knows it all is alluz a-makin" of experience." The man who does not think that he "knows it all "bour Pumpe can find out a great deal about them in Grimmhaw's Pump Cateurem. By mail, postpaid, \$t. Dewey & Co., are Market St., S. F., Cal.

Jes. Selection of the control of the

Cal.

368,218.—Cutter-Head for Stone-Dressing
Machines—Mar & Spelman, Stockton, Cal.
Machines—Mar & Spelman, Stockton, Cal.
Dayton, Mey.
368,427.—Hunting Decov—Wm. Ryan, S. F.
368,427.—Operanting Hatchway Doors—C.
P. Stanford, S. F.
P. Stanford, S. F.
P. Stanford, S. F.
368,526.—Chiese. Cutter for Sash and Blinds
368,526.—Loperanting Hatchway Doors—C.
368,526.—Jos. Stoele, S. F.

88,556.—СНІЗЕІ-Сетте. os. Steele, S. F. 68,267.— ТОВАССО-ВОХ СОVЕК — E. Ziesche,

Vors.—Copies of U. S. and Foreign petents turnshed by Dewey, & Co., in the electrebric for telegraphic order). American and Foreign petents or telegraphic order). American and Foreign petents to redering a mad general petent beauties for Pacific Cos st inventors tensacted with perfect security, at reasonable inventors tensacted with petents of time.

## Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS U. S. and Patent Agency, the following are

Dewby & Co.'s Scientific Press U. S. and Toreign Patent Agency, the following are workly of special mention:

HUMTING DECOY.—Wm. Ryan, S. F., Cal, No. 368,427. This decoy consists of a series of adjustable floats, have deep ing means for altering their size with relation to each other so as to accommodate them to carn other so as to accommodate them to accommodate them to each other so as to accommodate them to carning the bird chercon, and supporting it is means for experience for amporting at a supporting the float state of the series of the series is the preferable to enes, as decoys, and the object than the series of the object that it is preferable to enes, as decoys, and the object that and be appropriate and the object that it is preferable to enes, as decoys, and the object it is a self-operating one—that is to solve the tast of the traveler of the series of the series of the series of the series of the conveyence. The operation is accomplished the the traveler to all the terminal series of the series

Ban Buenaventura, Cal. No. 368,477. Dated Alog. 16, 1837. This invention belongs to that Alog. 16, 1837. This invention belongs to that clease of cheek-reins and hooks which enable the driver, unsided by any extra line or string in his hand, to cheek and uncheek his horse or his hand, to cheek and uncheek his provement upon horses at will by the driving-reins or lines alone.

The present invention is an improvement upon to him in patent Mo. 345,401 of July 13, 1886, to him in patent Mo. 345,401 of July 13, 1886, this improvement consists in the application of the standard or post beneath the sittling hook of the abant, which spring has a single spring in the standard or post beneath the abant of the following his or so the control of the hook of the finletum plus as the cast to act to hold the hook up or down as the case may be, hold the hook up or down as the case may be.

Vectum Derdeng and all the control of the finletum plus as the case may be.

Were Most and Sasa Desde Ales, 16,1887, This Nev. No. 368,354. Dated Aug. 16,1887, This invention has to do with improvements in apparamental may be a the control has to do with improvements in apparamental may be a the control has to do with improvements in apparamental may be a the control has to do with improvements in apparamental may be a the control has to do with improvements in apparamental may be a the down with improvements in apparamental may be a the control of the down and a supparamental may be a the down and a supparamental may be a the down with improvements in apparamental may be a the down and a supparamental and a supparamental may be a the down and a supparamental may be a the down and a supparamental may be a the down and a supparamental may San Buenaventura, Cal. No. 368, 477. Dated

Nev. No. 368,354. Dated Aug. 16, 1887, This invention has to do with improvements in apparatus for raising sand and other material from the bede of rivers or other bodies of water, though it is especially applicable to the dredging of valuable surfiscous sands or tailings which have sitenward to be worked by the etc. The dredge consists of a peculiarly shaped usual processes to extract the gold, sulphurers, ofto. The dredge consists of a peculiarly shaped usual processes to extract the good sulphurest processes to regulating the position of the suction pipe and she preventing its position, means for oreasting a vacuum, and means for regulating the position of the suction pipe and she preventing elogged mathematical processes as a seas also various details of construction which tend to produce a practical construction which tend to produce a practical and operative dredge for the purpose intended.

and operative dredge for the purpose intended,
Ooverwreater,—Frank Batter, Slide, Cal.
No. 368,316. Dated Aug. 16, 1887. This
concentrator is for separating and concentrating
the gold from gray sand, black sand, gravel or
tities. Beach and combined in large quantities of common gray
with considerable quantities of gold, but mixed
with considerable quantities of gold, but mixed
with such large quantities of gold, but mixed
with anoni large quantities of gold, but mixed
with anoni large quantities of gold superatus
ble to profitably separate them, by any apparatus
of the requires considerable handling of the
profitably separate them, by any apparatus
of the requires considerable handling of the



### ELECTRIC DEVELOPMENT COMPANY.

### Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Tramears, Elevators, Signals and all kinds of Electrical Systems for lighting and substant power, oither direct or with storage batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

The only complete and satisfactory incardicatons. The Only complete and satisfactory incardicators are the control of a mone of working the whole time of a mone of working the whole time is an object. Estimates and designs on ttlatecory incendescent eryctem. Lights require no attention and are under complete con-in used working the whole 18 hours; invaluable to contractors and others to whom stimates and designs on application. EDISON INCANDESCENT LIGHT,

### Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

### S'OO DEMEL

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agency ingtons and the capital oitse of the principal nations of the world. In connection with our editorial, to conficultific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The other advantages far beyond those which can be presente before the Office, and the frequent information of Patents already granted, for the purpose of determining the patentability of examination of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us often to give advice which will save inventors the examination of Patents already granted, for the purpose of determining the patentability of inventions from the constitution of Patents and a propose of applying for Patents upon inventions which are not new. Circulars of advice sent free on receipt of postage, Address DEWEY & CO., Patent Agents, 552 Market St., S., F.

### CALIFORNIA VIGORIT POWDER CO.,

No. 40 California Street, San Francisco,

NILHO-CTACEHINE

("DYNAMITE" or "GIANT")

Vigorit "LOW" Powder, Blasting Powders.

FOR REMOVING STUMPS AND TREES,

WORKS: California City, Marin Co., Cal.

THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

GIVAL BOWDER OF DYNAMITE,

Of Different Strengths as Required.

GELATINE-DYNAMITE, Stronger than Dynamite and NOBEL'S EXPLOSIVE GELATINE," which contains 94 per

10DSON POWDER IMPROVED.

FOR HAILROADS AND LAND CLEARING. Is from three to tour thines stronger than ordinary Blasker and time said money. It is as dry as the ordinary Blasking Powder and runs as freely.

GENERAL AGENTS, SAN FRANCISCO, CAL. BYNDWYNN' MIETSEN & CO.

SLEVN ENGINES'

ARCHITECTURAL IRON WORK, lce and Refrigerating Machines, Shafting, Pulleys, etc.

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco. GENEERL MACHINE WORK.

GREAT REDUCTION!

BATTERY SCREENS.



Seroons a specialty, from No. 1 to 15 (fuo; Ordors promptly attended to.

San Francisco Pioneer Screen Works.

ZZZ FIRE SI, Sau Francisco, Cal



MECHANICS. INSTITUTE, [ORGANIZED 1855.]

San Francisco, Cal.

BOARD OF TRUSTEES FOR 1887.

Twenty-second Industrial Exhibition

Opens Sept. 1st, Closes Oct 8th. WM. P. STOUT, Supt. J. H. CULVER, Ass't 8ec'y

MINCHEZIER HONZE

San Francisco, Cal.

Laundry Free for the use of Families HOT AND COLD BATHS FREE.

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.



If you want a good pair of Gloves, ask your merchant for

Ul, our brand.

LEAK GLOVE MANUFACTURING CO.

SAN FRANCISCO.

Shorthand, Typewriting, Penmanship, Bookkeepnak 24 Post St. S. F. BUSINESS

S tor circular. MISS BARRETT, rooms 7 and 8, 240 Montgomery 25., San Francisco.

Persons receiving this paper marked are requested to examine its contents, terms of subgreed to examine its contents, terms of subgreed to examine its their own patronage, and are titled in a parecicable, and in a sid in circulating the fundant or the more widely formal, and making its inheling its inhence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. It shreads a subscriber, please show the paper to others.

Complimentary Samples.

bridge pocket assistant.

Price 50 cents, po-t-paid. For sale by DEWEY & CO.,

220 Market St., San Francisco, Cal.

A STAUDARD WORK.

ATTENTION, MILLWRIGHTS!

Leffel's Construction of Mill Dams and
Bookwalter's Millwright and
Mechanic.
Agonaganapan

pileg similings, and setting tanks, dichloride of coppete. Mr. Astron is a practical minest, of long working ritemes on this coses.

220 Market St.

220 Market St.

Testing and Working Silver Ores

CHILLED

MHEETS CAR

IRON CASTINGS of all descriptions.

MEDEL AWARDED, MECHANICS, FAIR. AND RAILROAD CASTINGS.

STEIGER & KERR

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. TAS, W. KERR. CHAS, R. STEIGER.

### fron and Machine Works.

### CALIFORNIA MACHINE WORKS,

WM. H. BIRCH & CO., EVGIVEERS AND MACHINISTS, ON 119 Beale St., - San Francisco Person Machine Fight Mill.

Steam Engines, Flour Mill, and Mining, Saw Mill and Mining, Saw Mill and Machines

Manufacturers of B. E. Henrickson's Patent Automatic falety Catches for Elevators. All kinds of machinery made and repaired. ELEVATORS Brodle Rock Crushers,
Steam Power, Hydraulic,
Steam Power, Walk and Hand-Power

### Golden State & Miners Iron Works.

Marutacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

STEVEUSON'S PATENT

### Mold-Board AMALGAMATORS,

Golden State Pressure Blowers.

First St., between Howerd & Folsom, Sts.

THOMPSON BROTHERS,

### ENKEKA FOUNDRY

29 and 131 Beale St., between Mission and Howard, S.F.

MANUPACTURARS OF CASTINGS OF SVERY DESCRIPTION.

MANUTERS OF GENERAL MACHINERY.
Works, W. 315 Mission 8t., San Francisco.
Special attention given to Woodworking Machinery.
Steam and Gas Engines. Correspondence solicited.

### MINING ENGINEERS.

### Oivil and Mining Engineer, W. A. GOODYEAR,

Address "Business Box A," office of this paper, San MINING EXPERT AND GEOLOGIST.

### **BOSS E BROMNE'**

Mining and Hydraulic Engineer,

WO. 307 SANSOME ST., SAN FRANCISCO.

### The Techno-Chemical Receipt Book

NOW READY.

THE TECHNO-CHEMICAL RECEIPT BOOK.—Containing Several Thousand Receipts, covering the Latese, and Indian Several Thousand Receipts, covering the Latese, and Thousand Receipts, covering the Latese, and Theorem an

HENRY CAREY BAIRD & CO., Industrial Publishers, Booksellers, and Importerr, 810 Walnut St., Philadelphis, Ps., U. S. A.



cinc, Copper or Br as Screens for all purposes. Cali-ornia Perforating Screen Co., 145 & 147 Beale St., S. F.

### THE RUSSELL PROCESS COMPY

NEW YORK OFFICE, IS BROADWAY C. A. STETEFELDT, President.

ROOM 709.

EVELDS Set Poet St. E. F. Sed for Chamber St. Poet St. E. F.

Engraving Superior Wood and Metal Engra ing, Electrotyping and Stereotyping dope at the office of this paper,

### NEWHAL

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Obstream Street, San Francisco, Cal.

Agents for Growers and Manufacturers. Obstreament of Vessels for all Trades. Agents.

for the Mexican Phosphrate and Subtur Company's Froducts.

General Insurance Agents.

Have correspondents in all the object eities of the United States, Europe, Australia, India, Objina and the principal states of the Pacific. Purchase goods and deall california produces in those countries.

Part Agents of the Pacific Francisco. Of United States, Manufacturers and the principal states and the Pacific Capacity of Manufacturers.

General Agents for the Pacific Coast of WATIONAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass.

Location of Works, Potrero. P. O. Box 2128.

Office, 216 Market St., S. F.

### Pump Agents of the Cameron Steam STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

PANS, SETTLERS, RETORTS, ETO., ETO. STAMPS

BARY HOISTS, VENTILALING FANS, SCIF-FEEDERS, PULLEYS,

Vertical Evolues, Compound Coudensing Engines, Automatic Cot-ore Excines, Automatic Coudensing Sharting,

**NUION IBON MOBKS'** TRY OUR MAKE, CHEAPEST AND BEST IN USE.

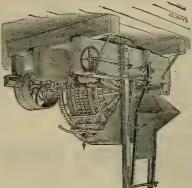
### MOBKS

HINOKUEY, SPIERS & HAYES, Proprietors.

[ESTABLISHED IN 1865.]

Office, 230 Fremont St., gen Erancisco.

MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or Compound, Sten or Side-whoel Engines,



TUSTIN'S PULVERIZER.

## **ENGINES**BOIFEBS

OE VIT KINDS'

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGRUTS FOR THE PAOIPIC COAST FOR THE

SPECIALTIES: Deane Steam Pump.

Corlies Engines and Tuetin Ore Pulverizers. DEAUE STEAM PUMP. Agents and Manufacturers of the Liewellyn Feed Water Furifier and Heater.

### PACIFIC ROLLING MILL CO.,

UP TO 20,000 LBS. WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought f Wrought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA

SOFT and DUCTILE,

MORKS ORE WET OR DPY.

Tustin's Pulverizer

Mill Machinery, Saw Will Engines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Wheels,

MISCELLAUEOUS MACHINERY.-Flour Orushing, Amalgamating Pana, Settl ra, Furnaces, Re-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc.

MILL MACHINERY.-Batteries for Dry or Wet

MINING MACHINERY.—Hoisting Engines and Works, Cages, Ore Buckets, Ore Cars, Fumping Engines and Pumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

SUPERIOR TO IRON FOR

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rogs, from \$ to 3 inch diameter and Flatstrom I to 8 inch. Angles, Tees, Channels and other sheel Flatstrom I to 8 inch. Angles, Tees, Channels and other steel Wagon, Burgy, and Teel William and Special Shape Steel Pares I from I2 to \$6 pounds per yard. ALSO, Railroad and Merchant Iron, Solied Seams, Lough Steel Head Steel Shapes Steel Flats and Every Williams, Cranks, Cranks,

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL.

PACIFIC ROLLING MILL CO., 203 Market St., San Francisco.

NOTICE TO

WINTING WEN

Engineers' Tables of Progress

NEM LOBK

THIED EDITION NOW READY.

SENT FREE ON APPLICATION

For Catalogues, Estimates, Etc. addre

PARKE & LACY,

8 California St., and 21 Fremont St.

Electric Lighting.

THE ONLY PERFECT SELF-REGULATING SYSTEM in the world, Manufactured under the patents of
For Simplicity of Construction, Perfect Automatic
Steadiness and Quality of Light produced, we invite competition with any known System of Bicchiic Are Lightpetition with any known System of Bicchiic Are LightBicchii Are Light Bicchii Are Light Bic

Solves St., San Francisco, Cal., solves Agents FOR.

N'S' KEILH

Inventor and Manufacturer of

Keith's Electric Dynamos

MOTORS, LAMPS

Storage Batteries

Electric Railways, and Apparatus for the Electric Transmission of Power,

Dynamos and Motors of all sizes for Conveying. Power from Waterfalls for use in Mines and Mills, erected under guaranty of performance.

TUBBS & OO.

Constantly on band a full assortment of Manila Rope, see Fopp, Tarred Manila Rope, Hay Rope, Whale Inc. etc., etc. Extra sizes and lengths made to order on short notice

Established 1856. San Francisco Cordage Factory

This new and important book is on the use and con a struction of Hytones, Filmes, Pharms, Fipes, Flow of Water on Heavy Grades, methods of mining, shadow and deep placens, history and development of mines, records of placens, history and developments, etc.; also describe hurdys, rockers, inthores and sluices; tailings and dump; duty of mines; inch, etc. A evy practical work for gold miners and users of water. Price, \$8; post-paid. For gold miners and users of water. Price, \$8; post-paid.

BY AUG. J. BOWIE, JE.

Practical Treatise on Hydraulic Mining. Ottice, 43 DEY ST., NEW YORK.

Clayton Air Gompressor Works,

For CATALOGUES, ESTIMATES, Etc., Addres And Ceneral Mining Machinery ROCK DRILLS, AIR COMPRESSORS,

CLAYTON

Catalogue No.5, Jan I, 1887

AND MAILED FREE ON APPLICATION,

INZL IZZNEDI

California, Meyada, Oregon, Arizona and Washington

ELECTRIC IMPROVEMENT CO.,

**WEERICAN SYSTEM** 

SAN FRANCISCO, OAL,

REPRESENTED BY

INCERSOLL ROCK DRILL CO.,

Section 16x16 feet; Length 36 miles.

AND FULL DESCRIPTION OF THE

WITH MAPS, ILLUSTRATIONS

and others interested in

ENCINEERS' CONTRACTORS,

TUNNELING, SHAFT-SINKING, ETC.

SAN FRANCISCO, CAL

\*E 'O 'A (00'949\$) FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The west and

The Moureace,

The Moureace Course Co

N. B.—Since the above was written the 20 Vanners having been started gave such actisfaction that 44 addi-tional Frues and more stamps have been purchased.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

Protected by parents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; Febru-ary 20, 1883; September 18, 1883. Patents applied for,

OBE THE FRUE CONCENTRATOR

OR VANNING MACHINE.

### (2220'00' FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the colebrated "Triumhh" Ore Concentrator possesses many advantages over any other style of Varners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter their construction, and facilitate their operation.

They are consistent between the superior features which she construction, insures their colities, durability, and perfect their construction in the best manner; their their construction is reduced, and occupy less mill room when operated. They are opportant in the construction is reduced, and occupy less mill room when the perfect their cost of transportation is reduced, and occupy less mill room when set up, an important improvement has recently been introduced into their construction, which consists of a Kityler Table. Place, and which takes the discharge from the feed and smalgem bowl. The improvement is in the reciprocal motion which is imparted to their takes the discharge from the feed and smalgem bowl. The improvement is in the reciprocated motion which is imparted to the feed and smalgem bowl. The improvement is in the reciprocal motion which is imparted to the feed and smalgem bowl. The improvement is in the reciprocal motion which is imparted the restiments the feed and smalgem bowl. The improvement is in the reciprocal motion is the feed and smalgem bowl. The improvement is in the reciprocal motion in the feed and smalgem bowl. The improvement is in the reciprocal motion is a factor of the officients and use of the efficiency and apprintly of this form of Concentrator, and we shall be pleased to send Circulars covering such letters of testimony, and, as well, directions for setting up and operating free pleased to send Circulars covering such letters of testimony, and, as well, directions for setting up and operating free such experiments and see respect to the efficiency and appropriately directions for setting up and operating tor any considerable order.

JOSHUA HENDY MACHINE WORKS,

"TRIUMPH" ORE CONCENTRATOR. CHERRY

HEINE SAFETY

San Francisco, Cal. Nos. 39 to 51 Fremont St.,

Room 7, No. 109 California Street,

L. R. MEAD, Secretary.

R. S. MOORE, Superintendent,

WM. H. TAYLOR, President.

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY

DURABILITY,

AND FACILITY OF INSPECTION and REPAIRS. ECONOMA'

60,000 Horse Power now in use.

Guaranteed More Efficient than any other Boller made. Boilers can de scen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., Ckiliornia Jute dilils, and other places.

REFRIGERATING MACHINERY for Steamships, Browerles, and Cellars,
WILSON'S PATENT GAS-PRODUCER,
STEAM BOILERS of all descriptions.
STEAM BOILERS of all descriptions.
STEAM SHIPS-Steam Vachte, Marine Engines and Boilers, Screw Propellers, Centrifugal Pumps, Steamships, Steam Vachte, Marine Engines and Boilers, Screw Propellers, Centrifugal Pumps, Steamships, Steam Vachte, Marine Engines and Boilers, Screw Propellers, Centrifugal Pumps, Steamshipmen Vachte, Marine Engines and Boilers, Mounter Propensory; 80-steam Mill for Quartz Mounter Mining Company; 80-steam Patent Mounter Mounter Marine Company. BULLDERS OF

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces A all kinds,
AIR COMPRESSORS—Good Power Transmission.
HYDRAULIC BY MAPING and Hoisting Machinery.
WEOUGHT IRON WATER PIPE a Specialty, Morr.—Have just completed order for 36 miles of 44-inch
pipe of 4-inch iron for Spring Valley Water Company, San Francisco.
SAW-MILL MACHINERY of all kinds.
SOLF MALULACITURERY (or Pacific Coast of the Celebrated "Heine" Patent Safety Boller (Water Tube);
60,000 horse power now in use.

WATER TUBE

MACHETH FAREAT STEEL-RIM PULLEYS—Filty per cent lighter and 25 per cent cheaper than east-tron pulleys; will not break in transportation.

**BOILER**,

HAZELTON

A NEW AND RADICAL DEPARTURE IN

**MAJTS** GENERATOR.

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL

CIHCULARS.

PACIFIC IRON WORKS,



BRAYTON & CO.,

MACHINERY MINING

San Francisco, Cal.

BAN FRANCISCO, CAL,

SALT LAKE CITY, UTAE,



PORTLAND, OREGON.



Machinery

Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST.,

Machinery, Steam Pumps, M 000

ENGINES and

NOTICE.—All our plates are guaranteed to have the feathed are feated be. for the full weight of silver agreed upon, and are feated be. fore leaving our worsts, thereby acoiding the complaints about light weight, made so often before we started in this branch of industry.

### JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

Agent for HOSKINS' BATTERY SCREENS AND WIRE CLOTH

HADRO-CARBON ASSAY FURNACES

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES. EOL.

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

No. 108 FIRST STREET, FRANCISCO NOVELTY AND PLATING WORKS

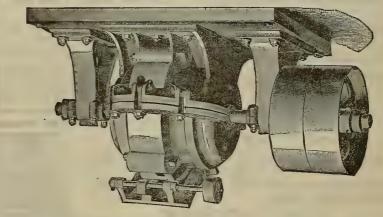
HUNTING TON,

AND ORE CRUSHERS, CONCENTRATORS

Steam Engines and Shingle Machines. Mining Machinery of Every Description,

REND FOR CIRCULAR

SAN FRANCISCO, CAL. No. 45 FREMONT STREET,



### CENTRIFUGAL ROLLER

--FOR WET OR DRY-

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of smalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh dry, and from 3000 to 6000 pounds Wet.

All wearing parts easily and oheaply replaced. May be seen in operation at the New York Metallurgical Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, furnished on application.

THE FRISBEE-LUGOP MILL CO.,

HOOKER & LAWRENCE, Gen'l Agents. NEM YORK. Office, 145 Broadway, cor. Liberty St.,

FROM 2 TO 100 H. P., ALWAYS IN STOCK

EBS HOLLOWAY FIRE EXTINGUISH-

BRADLEY CUSHIONED HAMMERS.

MASSEY'S STEAM HAMMERS.

BRYINGED MITTING MYCHINES

EXHAUSTS. BLOWERS AND

MEBBER CENTRIFUGAL PUMPS.

BLAKE'S IMPROVED STEAM

CHIMISLS, LOOFS' MEM HVAEM WVMNE,G CO',Z MV-

erank & co.'s woodworking Machinery, MACHINERY, WOODWORKING

Cor. Fremont and Mission Sts.,

SICKLORD'S POWER DRILLS.

TURBINE WATER WHEELS.

SHIMER MATCHER HEADS.

SERIN BYID SYN BUYDES!

YACHT ENGINES.

SOFE VGENTS FOR

H. W. JOHNS' ASBESTOS PACK-

TVNE VND BODIEK SVM MIFES

ING CO'S EUBBER GOODS.

ROBLING INTECTORS AND ETEC-

NATHAN AND DREYFUS OILERS.

TAUITE CO.'S EMERY WHEELS

PICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY.

SOUTAL ENGINES.
PAYNES VERTICAL AND HORI-

ATLAS ENGINE WORKS ENGINES

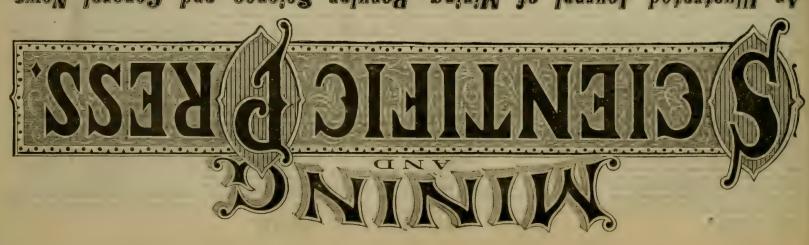
ENGINES' EKOS, HOIZLING

San Francisco, Cal.

ORE CEDSHER

INDSON ENGINE GOVERNORS.

MILL SUPPLIES AND LUBRICATING OILS.



liustrated Journal of Mining, Popular Seience and General News.

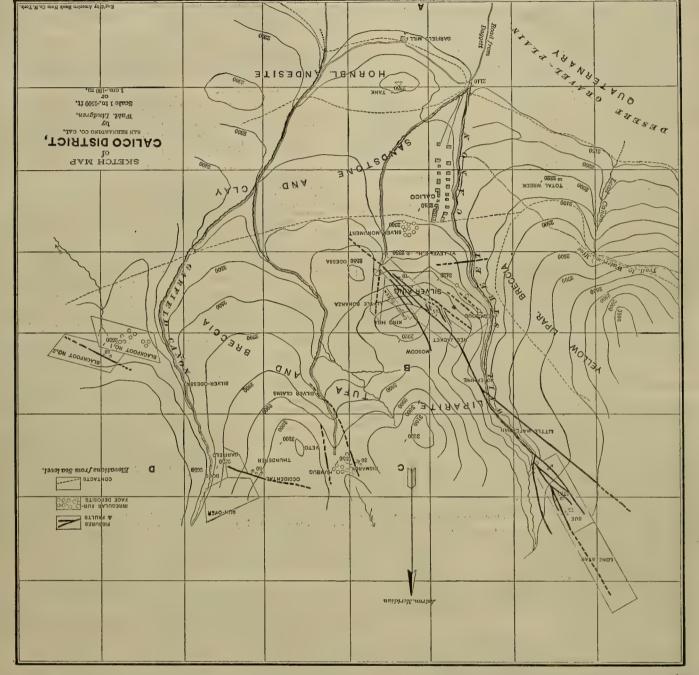
VOLUME LV.

SAN FRANCISCO, SATURDAY, SEPTEMBER 3, 1887.

Publishers.

Propies & CO.

Desired Mining District, the present purpose. The rest of meining district, San Bernardino county, the main silver mining camp of California. The present properties a paper by the properties one which accompanies a paper by the properties of the series one which accompanies a paper by the present properties of the strates of the properties of the series of t



Between the from of the main and best-studied fracture, which Mr. Lindgren designates as the "King plain, or 4000 the result of torsional movement, or the conmenting dis security action of two forces in somewhat different directions.

(Continued on page 149) tions of vertical movement only; in others, for instance in the Garfield mine, the striations are ferent directions.

Movement has often taken place along the fractures. In the King system there are indica-

Waldeman Lindgran of the O. S. Geological Average as described by the Merican Institute of the Merican Institute of Versage and Arisona, beared the south on San Mining Engineers. The map, which does not the positions of a few mines, obtained from the positions of a few mines, obtained from the positions of a few mines, obtained from the parented claims. Only a sequential of the parented claims. Only a sequential maining districts, there is an enormal month of the mining districts, there is an enormal mapping, the output of the mining districts, there is an enormal mapping of which would be sequentially limited to the mining districts of which would be sequentially limited to the mining districts of which would be sequentially limited to the mining districts of which would be sequentially limited to the mining districts of which would be sequentially limited to the world be sequentially limited limited to the world be sequentially limited to the world limited l Waldeman Lindgren of the U. S. Geological San Bernardino borders toward the east on the Atlantic & Pacific railroad.

Mining Engineers. The map, which does not Diego country, California. Topographically as mountain conclaim to be more than a careful sketch, is based of the constitute of a few mines, obtained from the positions of a few mines. The map is the map of the great basin. Broad shallow lake the sea level. The map is the map of the great basin. Broad shallow lake the sea level. The map is the map of the great basin. Broad shallow lake the sea level. The map is the map of the map

caustic reaction) will be free from copper, but may be donneid-able silver. In this case the airy be considerable silver. In the case the analy be core iron safety the caustic lime has been neutralized with surface with a surplus of soid and be surplus of soid has been added besides. The reaction is has beatened by he well of the solution with steam. At Lake comment silver was accomplished in 12 hours, cannot silver was accomplished in 12 hours, sand 1½ to 4 ounces of silver per ton of ore were saved, with the expenditure of 3 pounds of early be the commended in certain cost of pounds of silver per ton of ore were precipitation of the cases to increase to the wash-water below the filter, and force it up through the ore until it reaches sees to increase the course the contrent. A precipitation of silver chloride, etc., takes the subsequent filtering of the contrent, and three sabsequent filtering of the continuing may be due to the removal of fine or particles from the filter khrough the upport of the water.

MINICAL DINICAL SCHMITHS CHING SHIPS; 310 ones of the control of sources of the control of the control of sources of the control of sources of the control of the control of sources of the control of s

\$285,000.

Graphite.—The production in 1886 was 415,525 gounds, valued at \$32,242. In 1855 the production was 327,883 pounds, valued at \$30,230.

The prior remained constant at 8 cents per
pound. This is sclusive of 500 tons of impure
graphite mined at Cranaton, Rhode Island, for
graphite mined at Cranaton, Rhode Island, for
graphite mined at Cranaton, Rhode Island, so
Alum.—Production 90,000,000 pounds, valued
at \$1,350,000. About biree-fourths is made
trom imported cryolite, beauxite, aluminous
shale and other raw materials.

Copperus.—Production 22,000,000 pounds, or
11,000 pourt tons. Value, at 50 cents per cwt.,
\$110,000.

Fluorspare.—The annual production for the

\$110,000.

Place Three years has been about 50 post for the past three years has been about 50 post based on the mines in Indiana at \$4.50 per ton, valued in the mines in Indiana at \$4.50 per ton, valued in the mines in Indiana.

Rushk. — Production for coloring artificial feeth about 600 pounds, valued at \$2000.

Mineral Waters. — Oonsidering only the amount sold, the production was \$,950,31 gel. lons, valued at \$4.534,070. This shows a slight total decrease since 1885. This may be only the only part at \$4.504,070.

Rushk. It all the springs had reported the figures would probably have shown a total infigures would probably have shown a total increase, although some large springs undoubtedly crease, although some large springs undoubtedly offers offers although some large springs undoubtedly sold less.

Lithographic Stones.—Considerable effort is being made to develop the industry in Tennessee. About 50 tons have been taken out and dressed. The use of the stones has proved quite astisfactory, and will probably increase.

Magnesike.—Heretofore the raw materials for magnesium commounds have been imported othicfly from Germany. The annual imported of magnesium commounds above ones in making magnesium commonds per been ones imported of magnesite vary from 100,000 to \$2,000,000 to 11 and 1386 the production of magnesite was begun on Cedar mountsin, Alameda country, California, the production of magnes eite was a begun on Cedar mountsin, Alameda several tons, was shipped to New York.

### Lixiviation of Silver Ores.

A Description of the Russell Process \*

### [NUMBER 6.]

The Trestment of Rossted Ores.

Animony, Production she seem stall same of the specimens and for gens of the stall same and so deciding the stall same and so deciding the stall same and so deciding the stall seem and the stall seem of the sta The Treetment of Roested Oree.

The First Wash-Water.—The quantity of first wash-Water.—The quantity of this varies between SO and 80 oubic feet per ton of ore; the time of leaching from 1½ to 4 hours. It is generally used cold, but with water asoluble safts removed by the first wash-water are soluble safts removed by the first wash-water are soluble safts removed by the first wash-water are soluble safts removed by the first wash-water are and chlorides of copper, xinc, manganess, and chlorides of copper, xinc, manganess, and chlorides of caustic lime. Should lead and and the safts and calcium; also autimonial and chloride by present in the roasted ore; it will be choride be present in the roasted ore; it will be choride by the safts and submitted and the caustic lime. Should lead chloride by present in the roasted origin of some solutions. Lead sulphate, however, is somewaith washer is supplate the conformed and in a contract of solution of supplate and silver choride and silver chore wash-water may hold anfincient coppers and silver to be worth saving, and, in this case, is collined to the solution of sulphuric and, washer may hold sufficient coppers and the coppers and silver can be separate fank. Warming, and the coppers and sulphuric acid, hasten it seed to see the same sulphuric acid, hasten these resonances, and sulphuric acid, hasten these resonances. Silver choloride of respectations, of sulphuric acid, hasten these resonances.

see ores in 1885 was 23,258 long tong, yanded at \$190,281.

\$190,281.

Ten.—Development work in the Black Hills resulted in the accumulation of considerable or per piles at the mines awaiting concentration.

Autimony,—Production 35 tong metallic antinony, valued at \$5000. A small amount of subhidde of antimony was nate so bed for chemical manufacture.

Aluminum.—Aluminum bronze containing 10 per cent aluminum was made to the extent of per cent aluminum was made to the extent of 50,000 pounds, valued at \$20,000 at \$40 cents of \$0,000 pounds, valued at \$20,000 at \$40 cents of \$50,000 pounds of anticon and \$50,000 at \$60 cents of \$50 c

was also made directly from orea, to the standard of 18,000 short tone, valued at \$1,400,.000.

Out of the standard of 18,000 short tone, valued at \$1,000,000. This is a decrease of \$29,081 dasks, or 2,291,547 pounds, 20,92 dasks, or 2,291,547 pounds of the total valued at \$1,000,000. This is a decrease of \$3,50 per fask. Utah produced 87 dasks of quickailver in addition to the above. The produced so \$35,20 per fask.

Out,000 pounds, and its value to \$392,000, over a drotion of quickailver vermilion increased to 700,000 pounds, and its value to \$392,000, over a drotion of quickailver vermilion increased to 700,000 pounds of nickel, 60 tone of nickel and colored to the produced ore, and \$46,-700,000 pounds of nickel and mather to the standard ore, and \$46,-700,000 pounds of nickel and sold, all tone of acceptance or a such at the standard ore, and \$30,000.

Mandards, I.S., I.S., Mondards, or shout 5000 tone were of \$30,000.

Mandards, I.S., I.S.

reases in value of the month of 1885 and metal of 1886. The processed from the processed for the mines all of 1886. The mines of the second of the mines of the second of the mines of the second of the mines of the mines of the second of the mines of the second of the mines of t

Precious Stones.—The value of the rough geme sold in 1886 was \$79.056. In addition, gold quartz was sold for specimens and for geme to the value of \$640,000. The value of this, when are is \$100.000.

Miscellaneous,

ting.

Infusorial Earth.—The production for the Juscorial Earth.—The production with a spot year amounted to 1200 abort tons with a spot First.—About 30,000 long tons, having a spot value of \$120,000, were used in pottery manufacture, besides a considerable amount for sandapare.

Buivesones,—The total value of the finished buivesones,—The total value of the finished buivesones was \$275,000. The increased use of roller-mills affected the French bubristones, more than the domestic stones.

Grandstones.—Total value \$2,500,000; proGernadum.—The production in the past few years has been quite steady; in 1886 it was 645 short tone, valued at \$116,190.

Nowcettiste.—The rough whetstones amount. odd to 1,160,000 pounds, valued at \$15,000. The value of the steady in 1896 it.

Abrastve Materials.

Bruckural Materials.

Building Stons.—Value estimated to be about the same as in 1885, \$10,000,000.

Brick and Tile.—Value \$38, 500,000; this value represents an increase of 10 per cent. over last greater than 10 per cent; there was some falling off in value during a part of the year.

The increase in production was enightly greater than 10 per cent; there was some falling off in value during a part of the year.

Linus.—The production is estimated at 42,-500,000 barrels, with an average value of 50 cents per barrel.

Sou, Mathematical pertland cents of \$3,097,-700 the was 4,350,000 barrels, along at \$3,097,-700 the was 4,350,000 barrels, and a \$3,000,000 the was 4,350,000 barrels, and a \$3,000,000 the same of the sam

years.

Petroleum.—The total production was 28,110,115 Barrels of 42 gallons each, of which the
Pennsylvania and New York faelds produced
25,798,000 barrels. The total value at an avergeo of 714 cents, the average value of the Penngylvania and New York petroleum, was \$20,028,457. The production chowed an increase
appearing and New York petroleum, was \$20,016,265,074 barrels over the production of 1885,
in cubic feet. It is estimated that the amount
of coal displaced by gas in 1886 was 6,353,000
of coal displaced by gas in 1885 the amount
of coal displaced by gas was 3,161,600 tons,
valued at \$4,854,200.

The Second Wash-Water.

with the latter is recommenced, and oppreciable in the neutral streams of the process.

B. The yoused ove contains an appreciable in the neutral scale has been contained as follows:

In this case the freatment is modified as follows:

In the ordinary, and the former is not circulated streams of a stream ordinary and the stream of the latter. The volume of extra solution varies between 18 and 40 cubic deep to the character between 20 between 20 bear 40 cubic deep contained between 20 bear 40 cubic deep contained as a contained with case of causain containing an appreciable percentage of causain the first wash-water, the result is very diesertial with extra solution. But if the extra solution is percent of copper containing and to make a containing only 1-10 per cent containing only of setroug copper and part of the cent colution of one of the cent copper and the cent and the cent cent of the cent sellows: Appearance of the cent sellows: Ap

New Yorkstone of the solutions are applied in this case is, one-half of the ordinary solution, the solutions are applied in this case is, one-half of the ordinary solution, to the ordinary solution, to the ordinary solution and the solution of the ordinary solution and the solution the ordinary solution warries between 30 and 120 outpio feet per ton of ore; the time of lesohing which it from 12 to 30 bours. The extra solution is circulated from 4 to 6 bours. Both solutions are generally used warm. After the treatment with water has been inflated and the times of interest of the solution are solution as solution as solution as the preceding the fank. Lesohing is now continued until the ordinary solution as a perceptible resolute the extra solution is turned into the precipitation of the ordinary solution has solution is turned into the precipitation of the ordinary solution has solution is turned in the arts a solution has solution as applied in the manner previously described, only with the farm of the extra solution were solution to the comprose there is solution as applied in the manner previously decribed, only with the farm of the same of the extra solution mere solution by with the farm of the ordinary solution prepared through the capture provide assistent in the score of the ordinary solution were solution to astronam trace the compression of the comprose by the extra solution were solution to a surface of the compression of the ordinary solution were solution of the ordinary solution, and leaching the solution of custon of the compression of t

ng cases: The roasted ore does not contain caustic Under this head we have to consider the fol-

The Lixiviation.

As soon as the extraction of the silver is completed, the second, "wash-water" is in order. Its quantity is from 7 to 10 cubic feet part of

Interest to the France of the State of the Knik M. M. M. It is clearly the counsel which the smirable and the street of the Knik of the counsel which the smirable street is a street of the Knik of the counsel which the smirable trace a steech of primitive Belgian forging. For this purpose we will be added by some authors have left us, of results obtained in the excavations of the court, or the tombo of the test of the fact of the smirable written evidence which the Latin authors have left us, of results obtained in the excavations of the scories, or the tombo of the two facts of the successive of the information that we have left us, of results obtained in the two been able to promine upon the siderurgin of present uncivitived peoples. By deduction, by comparison, we will perhaps set up spain the week of the comparison, we will perhaps set up spain the word. The manner of the saint of the primitive race of the fast that of the primitive race of the period desire to say a word. The fast however, who the hourd the period with the tendent to the period were the desire to say a word. The fast few tombe to or Gauls, who appear to have desire to say a word. The few tenders in the thing the condition of the primitive race of the few tenders in the few tenders to or of Gauls, who appear to have been the few form were driven out several cases which he sound the word the Nermanners force back the Osters which the Store our earthings, the Artois and the Vermanners for a country several cashing the Vermanners for the Merce, from the Bouth, the Gauls, and established themselves, side by side, in the Aminonis, the Artois and the Vermanners for the Store of the Store o The chairge are now sampled with a long Tabrachage are now sampled with a long of the chair of t

Advantages, the Eburons, the Messignes, the Advantages, the Messignes, the Messig Copper sulphace solution, and the sulphace solution, and then Iss. 15.9 oz. 10.2 z. 70 a. 15.2 a. 15.2 a. 10.4 a. 7.5 a. 15.2 a. 10.4 a. 7.5 a. 10.4 a. 7.5 a. 10.4 a. 7.5 a. 10.4 a. 7.5 a. 7. Treatment of Raw Order.

The order in which the solution is are physical many order in which the solution is a polarion.

The order in which the solutions are applied questly, the extra solution is both preceded by ordinary. In some instances, but not treatment in the treatment of the solution is both preceded and followed by ordinary. In the latter case the operation is always circulation is always circulation is always circulation is always circulation to the view of the cover the charge after original to the cover the charge after original to extra solution. In the series of the cover the charge after about the cover the charge after original to each of the cover the charge after original to each of the cover the charge after original to each of the cover the charge after the cover the charge after original to each original the cover the charge after the cover the charge after the cover the charge after original to each original the cover the charge after the cover the charge and the cover the charge after the cover the charge of the street original to the charge of the charge of the charge original to the charge of the cover the complex and the complexed to an original the complexed or or 24 of the cover the charge of the cover the complexed or or 24 of the cover the charge of the cover t

breech clutts and the struct of the struct of the under wood. They are armed with the council of iron, 7es, because they manufacture it I be under our trease of trom are found everywhere in their council, 7es of the Adaptiques, who, ilike the Markiques, who, ilike the Markiques with the secrets the Markiques with the secrets of Asia in the secrets of Asia in the Markiques with the secrets of Asia in the Markiques with the secrets of Asia in the Markiques of the Asia in the Spanish of Spanish of Spanish of Asia in the Markiques with the Spanish of Spanish of Asia in the Markiques of the massiful or a level with the ground. Its exterior or the creaset, or or of the the prevailing wind from the creaset, or level with the passed of secutives the Asia in the Spanish or and a level with the Spanish of Markiques of the massifully the carbonizes, world the Markiques of the morning to satch the or is level and the Markiques of the submitted of the themselves of the submitted of the themselves of the submitted of the themselves of the markiques of th

PURE ALUMINUM BY A NEW PROCESS.—A petent has recently been granted to three better of the combined action of aluminum by the combined action of aluminum bon, sulpide of extraction as aluminum combined sortion of astronome is obtained by mixing powdered aluminous cashon; so the mixture is added a sufficient quantity of any oil or tart to form a sufficient quantity of any oil or tart to form a sufficient quantity of any oil or tart to form a sufficient quantity of any oil or tart to form a sufficient quantity of any oil or tart to form a sufficient quantity of any oil or tart to form a sufficient quantity of any oil or tart to form a sufficient quantity of any oil or tart to form a sufficient and into any of any of the presence of any photon of standing a sufficient places. The pieces are placed in a closed vessel provided with pipes, with a current of 'carbonated'. The presence of the carbon into the mass until the reaction is complete, and the other allows of the stone of any one of which leads a current of carbon at the fiber with a carbon for allows of the pipes, with a current of 'carbonated'. The branced is of aluminum than obtained is drogen. The latter unites with the sulphur, producing sulphuretering of any of the producing sulphureted hydrogen, leaving the

16.3 "Experiments with samples of raw one treated at present by the patio process. Value of treated at present by the patio process. Value of raw ore 12.15 oz. silver per ton. Tailings 7.05 oz. after treatment with extra solution. Tailings 4.05 oz. after treatment with extra copper sulphate solution and then adding so-dinn hyposulphite. There is also a marked difference in treating ores that have been difference in treating ores that have been reasted with salt, as the following experiment will show:

sulphite.

2d, Experiment with samples of raw ore.

Tailings after treatment with:

Treatment of Raw Ores.

Discharging the Tallings.

will show:

will show:

4th. Experiment with ores that had been will abow:

4th. Experiment with ores that had been to roseled with saft, and were the steed by barred to samelgementon, extracting shout 65 per cent of the salver. Value of ore 14.3 oz. silver per ordinary solution. Tailings 4.86 oz. after lixristion with extra solution. Tailings 2.81 oz. after lixristion with extra solution. Tailings 2.81 oz. after teatment with copper sulphnte.

All these experiments were laboratory tests and then adding sodium hyposulphite.

All these experiments were laboratory tests only, but I have no doubt that the results will be practically the same on a large scale.

which has been soaked, the operative facilitates the egrees of these scoring and stirs up the local solution been soaked, the operative fall the partitions of which he aggiratines all the partitions of which he aggiratines and in the motion, the man seizes the metallic mass and carries it quickly to the antility, to take advantages of its heated state, and with the theorem blows of the barmer, wolfa the iron by completely the molecules upon themselves. The pressing the molecules upon themselves. The masselful is the same furnace, with the obarge contained in the best and permit a new toping to one is the fall of the monetamble for and well form a masselous of ince and in metal is at last ready in the first of the work of the smith, who, by the aid of the first of the work of the smith, who, by the aid of the first of the smith as monetamble for and presents are abled to the first of the work of the smith and at least and of the barrons despite of the smith who, by the iron the barrons which he dresses, political in the first of the work of the smith and defining under a smith which he to can be a controlled to the parametrial of the iron on the which he to can be a smith compressible of the forman of the single method of the smith of the smith of the first of the smith of the smith of the falled datalonism, of the work of the data and its immediate elaboration into mandella in the Spanish as its still Practices of the Spanish as its still Practices of the of ore. The time of this operation varies from between 14 to 24 hours.

After the ordinary solution has been replaced by the west-water, the states is allowed to make west-water, the state of the solutings are to be shoveled out, but remains in the charge if the tailings out, but remains in the charge if the tailings are to to be removed by sluicing. Origin of Metallurey. SEPT. 3, 1887.]

The Same as it is strated by the control of the strategy of th the content of the co

SELECTIVE ENGINEES.—One great mistable for the continued.)

SELECTIVE ENGINEES.—One great mistable strained by the continued. The county young men make is their idea that the boiler and get some of a score as the story of a few of the long of the county of the

MICKEL BECOMING A DEUG IN THE MARKET,

"Vickel is not rapidly increasing in use. The
yearly production is between 800 and 900 tone,
yearly production is between 800 and 900 tone,
while the supply available is much larger. The
tained is not very satisfactory. What is needed
in order to make an ective market for mickel is
are not sufficient to keep production constant
are not sufficient to keep production constant
are not sufficient to keep production constant
for profitable. One mine in North Caledonia
alone, it is estimated, oan if necessary produce
two or three thousand tone per year. Some
tokel for use as a coin. It is also said that the
Chinese meditate changing the obstact of
Chinese meditate changing the character of
their coinage.

The Shell of Pare Money.—In speaking, of a recent defaloation at the Troy post-office, a gentleman said: "It is never safe to inclose a gentleman said: "It is never safe to inclose an old by," said be, "men who are experts can tell whether a letter contains money or not notice an old greenback, it has a peculiar smell it be inclosed within a letter. It is better to send a registered letter or a postal note, or it to inclose a bill, he sure it is a new or it would not send a registered letter or a postal note, or it will not smell."

THE hoisting works of the Big Oak Mining Company, a mile from Colfax, were burned Sanday morning. The fire is supposed to have been the work of an incendiary. Loss, \$12,000.

THE Bock Creek District in British Columbia attracting considerable attention in that sec-on of the country. Over 600 men are now at ork in the camp.

THE Baker Iron Works at Los Angeles posi-ively refuse to accede to the demands of their rorkmen of ten hours' pay for inine hours

Mean Paoine Training a bina is a Training Southern Paoine will form Menlo to the Stanford form of the Stanford

98.48 0.37 Mirjinable meterials, 2.94 4.94 Mirjina, phoephorus, and traces of manganese. 1.21 Total Tree Prefatering truthes of the Are every similar to the anotent furnaces of the Librar, described by Volney in 1785, in his every similar to the energy in 1785, in the inverse of the curves we prick up scorras of fron, or rather concretions composed of fron in the metallic state; oresincompletely reduced; earthy pieces more or less roasfed, and fragments of carbonized wood. Here is the analysis of the lower stratum of this conglomerate:

The Prehistoric Furnaces of Lustin

snother scories, was destroyed ofter sack smed.

ing.

They Filled These Low Eurnaces

Simultaneously with ore and with tuel, which
was of wood that had perbapa undergone the
beginning of torrefaction of dryring. The ore
ware far from yielding up all their iron, to
indge by the possession in metal of the craugats.

The low durances were not shawny sected at
indge by the possession in metal of the craugats.

The low durances were not shawny sected

the points where the ores were found, and the
batter were often transported where the wood

the points where the ores were found, and the
batter were often transported where the wood

statement of the created the metal at
batter were often transported where the wood

statement of the ores to be

the points where the ores were of the ores to be

attended by the oreneed to the cone,

the great state at the base, were simply scooped

the great state, at the ordice of the cone,

and elliptical at the base, were simply scooped

the great state, at the ordice of the cone,

the great state, at the ordice of the cone,

the great state, at the ordice of the cone,

and elliptical at the besident with a obsence,

the great state, at the ordice of the cone,

the great state, at the ordice of the cone,

the great state, at the ordice of the ordice.

The state or refer or the depth,

southeas. There were of the cone, and in the direction of

inclination of the ordice of the cavities toward the

southeast, the direction of the ordinacts of

or the ordical.

The Prehistonic Wurners or Lustin

with flat stones. According to this account,

with alse some and the service of the

ordical side tennes.

The Prehistonic become are or under

The Same as is Still Practiced

### Antimony Mines.

Whenever antimony ore is struck, the reports generally overrate the value, but when the obtain any quantity of the percentage required. sufficiently high grade to be profitable. Those who purchase the ore here find it difficult to There are several deposits on mines which have been worked, but few of them produced ore of .tasco sidt no sanim ynomitas atiw ebam neet. It cannot be said that much of a success has

mine is systematically worked, the general average runs too low. There are some exceptions to this, but unfortunately not many.

It is not generally known that some of the state of the st

shows itself from three yards to five yards thick, with abundant metallization, having stopped for the present, and are now running new levels both east and west, where the lode extent. Two shafts have been sunk-one to a depth of 450 feet, at which distance they have and they have been opened up to a considerable mean return of over 22 ounces to the ton. There are six distinct lodes in the Oorgo mine, well as from bulk, and the average shows a several well-known experts, from samples as va shar need every have been made by nees, with a metallization of pure antimonial dead. Visible gold appears in the quartz and talists, with the result that they have since been purchased. During the process of developments lode has been struck, varying from seven inches to three feet three inches in thickseven inches to three feet three inches in thickbecomes necessary. They, therefore, brought s of senim edt qu gainego ni bebesoure evad fatiqes redrini lo noischortai edt eredr taioq ty which has, for some years, been worked by some of the English residents in Oporto, who -reqorq a si eredt eñim sidt gniniolba yleteibem stantial sum added to the reserve fund. Imand under such management a dividend of ten per cent was declared last year, and a very suba capital of \$500,000, to work one of the mines, by the natives, and traces of the old Roman workings have been found in nearly all of them. Lately a Portuguese company was formed, with richest antimony mines in the world exist within a few miles of Oporto, in Portugal. For many years these mines have been worked

### The Trinidad Mines.

two inches to three feet wide, besides anriler-

weins and pockets of pure antimonial lead from

overestimated production. He has no money, directors are hanling Mr. Browne over the coals directors are hanling Mr. Browne over the coals and they mow, the predicted dividends, and they now find that he underestimated expenses and which the company were not responsible. The about par, and statements were made by the brokers which have proved incorrect and for obse money, he left the other 50,000 in the hands of the directors as security for the divi-dend. Then Browne sold his 50,000 spares After taking 50,000 shares as part of the pur-Browne, who sold the mines to the company, grananteed 20 per cent dividend for five years. getting lout \$26,000 worth of silver. Mr. J. T. to be making much of a showing. The accounts show that they have spent \$150,000 in mines, in Mexico, for \$1,500,000, does not seem The English company which not very long ago bought the Trinidad and Silver Queen

tity of ore in the mine that will pay to work. a great drawback. There is no bonanza or rich ore body in sight, though there is a quanaffairs there. The drought in Mexico has been so the company cannot touch him. Mr. Stanley, a shareholder, has lately been to the mines and gives no flattering account of

He thinks the mine is valuable and -las aid Ils tesqu bad theyout betesquenu edt The mine is, however, in debt.
Mr. Browne was present at the meeting in
London and defended his course, saying that

Judging, however, from the general tone of

deretending. start for Mexico until they have a better untation, with the directors to see what can be done to get the company on a better basis. At all events, they do not want Mr. Browne to Browne's title was a serious one, and the share-holders have appointed a committee of consulwas considered that the question of Mr. the meeting, as reported in the English papers, it looks as if this English company would have been wise not to have taken these mines. It

> of Experience. Learning Wisdom in the Hard School

> tary system with a view to its introduction into visit an inquiry into the workings of our moneein to especta of the other objects of his official representative of hi-metalism as now appears in the person of the Duke of Marlborough, States, remarking on the injury the ostracism of silver had worked the industries and commerce of that nation. Not so soon, however, did we expect to see in this country an unsecond the searchting of himstelling of the same official superprising the same of of her monetary policy to that of the United Only a little while since we had something to say about the probable early abandonment of monometalism by England and the conforming

> looking to the restoration to that metal of its mport, and none too soon has action been taken ess the rehabilitation of silver as a rest of the serven rehabilitation of the serven rest of the serven res the attention of her people, Well would it be for that people were such the case. Meverthe-Of course, we do not believe, as the noble duke is said to do, that this currency question is in England the most important one claiming

> she was for a long time able to keep it, orushing out all rivals. But now that the field once exclusively her own is swarming with compowerful. Having gained a vantage ground, was not only the workshop and carrier, but also the arbiter of the world, she grew rich and canses, all of which are well understood. Dur-ing the hey-day of her prosperity, when she tion of silver, it was due to other and peculiar thrive for so long a time despite this degrada-If Great Britain has been able to grow and money function, a property of which it was de-prived so many years ago.

> s bas benchards ere stores letsi esedt seel monoto base best est free missing of the missing the sell against her target presses her estly decodence unpetitors, the weak points in her system-her

> work of retrogression so begun will go on, and Meantime, these errors left uncorrected, the different policy at once pursued,

> hail the change or more heartily welcome their accession to the family of Republics than the dwellers in the great commonwealth on this worthy of themselves, none would more gladly or roll and otherwise sot in a manner grown as it is a manner of the manner and otherwise sot in a manner that people would abolish the heary abuses they ing still a destiny so grand within their reach, being slowly relegated to a secondary power and going generally to the bad. If only now kinamen, to see a people once so great and hav-Great Britain, because, while few have more seriously blundered, none have shown themselves so slow to learn. It is not pleasant for us, their occupy just now a more precarious position than even be accelerated, it being the nature of error to gain force with the lapse of years. Of all the nations of the Old World none would appear to

right to enter. the two mining claims he had taken up and on the had be the comparison or bad on the the the commission of the commissio decision of the Commissioner and allows the ap-pellant, who is a deputy surveyor of Colorado, ever, the Secretary of the Interior reverses the utes the same as registers and receivers of land offices. In the case of Charles Moore, howveyors come under the provisions of the stat-Sparks has held heretofore that deputy surthe districts wherein they live. Commissioner ni awal gainim bas basl edt lo egstarvbs gai den by statute or by the regulations from takto be excluded from the class of officers forbid-DEPUTY SURVEYOR-GENERALS are hereafter

Hon. M. M. Estee, an oration, and Joaquin Miller, a poem, written expressly for the ocaudience at the opening exercises. In addition to the musical program, Mr. P. B. Cornwall, president of the Institute, delivered an address, the exhibition was opened. There was a large Veb emas of the evening of the same day The Mechanics' Fair,—The opening exercises of the Mechanics' Institute Fair took place on Thursday effermon at the Grand

party recently brought from France to work in California, and a party of 35 Frenchmen and California, who have just arrived, is the third such Campagnia de Boleo at Santa Rosslia, Lower THERE is a boom in the copper mines of the

Advertise the Mines.

mining interests were never in better condition know this is not the case, and that our quartzever, know anything about our mining resources. A large proportion think thay ever fornia mines are "played out," if they ever give the subject a thought, Of course, we thousands of people are looking toward Califor-nia as their future home. Few of them, howseldom a word about the possibilities connect-ed with mining. Yet there is now a great tide of immigration flowing into this State, and lands advertising their localities, but there and products of California, the miners seem to care very little about the matter. On every hand we see the owners of farming and fruit While the agricultural population of the State are now making every effort to attract the attention of the new-comers to the lands

and Banner districts, San Diego county, for inmining interests have made great advance of late. Old mines abandoned for years have been reopened and are paying well. At Julian not all farmers, and it might lead to mining investments. In the southern counties, where the greatest immigration has taken place, the some idea of the mineral resources. They are also. Samples of rock, gravel, etc., are easily collected, and each county as an agricultural as mineral as well as an expricultural exhibit, It would give the new-coners to it that the mining products are displayed ucts will be displayed. The miners should see form for a formation where the agricultural prodthan they are now. For the next two months fairs will be held

be materially benefited. There are not many northern and central California should not also There is no reason why the mineral region of .betoejorq si sqmso or less idle for ten years past, there is a genuine mining revival. And now a railroad to the stance, where most of the mines have been more

conducted on a much better basis than they were ten or a dozen years ago. Mining is now a legitimate business, being no longer in this seaim ni teevni ot elgoop wen esett ot sool ton era etserenti strarg off ? smrst ni as llew es riculture are carried on side by side. But here such is the case. Why, therefore, should we places in the world where gold mining and ag-

be made in mining as Well as farming. Displays of rare minerals, etc., will do little good, but the products that are being worked every day will let these people know that mining is money to tot. "Played out," and that there is money to State and on the case, some and control of the case.

State are thousands of claims that can be developed with a little money.

The mining community should bestir itself in this matter and endeavor to attract attention to the mines. The coming fairs will afford an opportunity which should not be ignored. District and interest attention to the mines.

### Manganese Ores.

a ni poedealy inerally imbedded in a tertenscious clay which requires washing to reas known the valuable deposits of manganese manganese deposits seem to contain less phos-phorus than the rocks from which they have been leached. It is also remarkable that so far it has been deposited from solutions, and that lime has been one of the agents in its deposition. Possibly this accounts for the fact that the usual, since they may see there practical proof of our industrial and other resources. The The origin of manganese is an interesting geological question. It is thought that its origin is similar to that of hematite ores; that The formal opening of the Mechanics' Insti-tute Fair took place this week. In view of the

at other times, in close association with the iron ores, veins or pockets of manganese will be found. This statement is specially true of the in developing the mining regions of Idaho, Montana and Oregon. Activity in real estate continues and is now make the ore a manganiferous iron ore, while ganese occurs as a constituent. At times the man as to man as to man as to the iron as to per day, are being erected at Tacoma, W. T. These works will be of the greatest importance to the Morthwest, and will have great infinence of this country. In almost all these ores man that manganese has a distribution almost co-ex-tensive with the deposits of drown hematite ores the generous founder, Dr. Cogswell, has made ample provision to carry on the institution on a It is found by the U.S. Geological Survey

neidelite ore beds of the great trentier of the character to the character of the character

being worked. ganese mining here has never been very much of an industry, though some of the deposits are streets, last Saturday. There was a large at-tendance of ladies and gentlemen to witness the most manganese are the Cremera mines in Virginia; Carteraville, Ga., and Bateaville, Ark.

There are a number of known deposits on this coact, both in Mevada and California. But manganese, both in Mevada and California. THE corner-stone of the new Polytechnic school, the gift of Dr. Oogswell to the odd the new girls of the oily, was laid at the site of the new religing, corner of Twenty-sixth and Bolson, and the state of the stat The localities in this country producing the in the south. Large numbers of immigrants and tourists are expected to arrive in California this fall and winter.

> SCIENTIFIC PRESS PHINING

Torms of Subsoription.

Annual Subsoriptions, \$3. Year embraries will be declined without cash in advance. All arrearings must be rate to \$3,50 per annum.

Advertising Rates.

as ilew as estate oft to traq fartnes and ni tief

Smelting works, with a capacity of 400 tons

as the young men and women of this city, as

school has been laid, with appropriate cere-

didxe sidt to erursel a ed lliw stididxe etanoc

the fair is of even greater importance than

large number of strangers now in this State,

Passing Events.

Business Announcements,

Dissible Mindle use factors of Mindle and Market 156.

MINING STOOK MARKET—From the various counties are the work where of California, New Market 168-68.

MINING STOOK MARKET—Sales at the San Francisco Stock Board, Notices of Meetings, Assessments, Dividends, and Bullion Shipments, 156-69.

MECHANIOAL PROGRESS—JO YOU OT TREES

A MECHANIOAL PROGRESS A Mechanical Moreirant Means Means Moreirant Means Mean

151. MECHANICAL PROGRESS.—Do You Do These Things; Proper Thickness for Boiler Plates; A Mechani-

Dismond, 1242.

(AIST), 1243.

(AISTLIANE OUS.—Lixivistion of Silver Orest Misorial Products in the United States, 1345.

(Independently, 147. A B O of Astronomy—No. 3, 171.

RDITORIALS.—Celico Mining District, 145. Pessing Every size Acardise she Mines; Learning Wiedem in ring Events; Acardise she Mines; The the Hard School of Experience; Antimony Mines; The of Milling Ore in Montane, 148. District, and Montane, 149.

ILLUGTEATIONS.—Steech Map of Celico Mining District, as ne Bernardino Co., Cal., 145. A California District, as ne Bernardino Co., Cal., 145. A California District, as ne Bernardino Co., Cal., 145.

TABLE OF CONTENTS.

Saturday Morning, Sept. 3, 1887.

SAN FRANCISCO:

SCIENTIFIC PRESS PATENT AGENCY.

Entered at S. F. Post Office as second-class mail matter

Our latest forms go to press on Thursday evening.

DEWEY & CO., PATENT SOLICITORS.

sambles Advertising Columns.

Tunnel Contract to Let...Gillespy & Childs. Assessment Notice...South Comstock Con. M. Co.

The corner-stone of the Cogswell Polytechnic

This institution will be of great bene-

liberal scale,

tion

Office, 220 Market St., N. H. cor. Front St., S. F.

**ВЕМЕХ & СО., Рарызана.** 

### Calico Mining District.

Ontinued from page 14.6.)

oppose The largest faulting seems to have taken place at the southeast end of the King system, where the agregate state of the step fault.

faults must be over 500 feet.

The liparite—substituting this mame for the formerly more used "trhyolite" is of some-

pletely filled with opacite. the ground mass. The ferro-magnesian silicates are brown mice and hornblende, the latter comsolase. In some places the amount of silics present as quartz in recognizable form is very small; the silics, however, may be contained in violet-brown or greenish, with a glassy to crypto-crystalline base, and usually rich in quartz and feldspars, of which some are plagiwhat differing appearance, although the difference once is more macroscopical than microscopical than attacture, it is a porphyrtic rook without flow attacture,

yon, it rests on the massive brown liparite. The appearance is as if this mass belonged to a sandstones, the latter, near the contact, being indurated and impregnated with silica. Fur-ther north, on the west side of Wall Street canthe beds of brown tufa appearing below the liparitic brecois" is in many respects peculiar. To also doing which mass, which are it is a heavy unattating helps, which many transfer of the property of th wolley,' se qem edt no betesibni sera

There has been but little erosion in the dis-trict, and the influence of dislocations and faults on the present configuration of the comomewhat later eruption.

try is apparent and interesting; they have often determined the course of the canyons.

The silver deposits of Calico may be divided

posed an open space between two walls, subsequently filled with gangue and ore. On the contrary, the deposition of ores has, in this in the old meaning of the term, which sup-

they sometimes have a tendency to tollow the dip of the strata. A fissure vein is always—as far as my experience goes—found near by and character, naually found in the tufe beds mear the surface, and seldom extending to consider-able depth. Although often wholly irregular, 2. Those of irregular form and " pockety" ned rock accompanying the dislocations. group, often taken place in the zones of fract-

ly chloride chloro-bromide of silver, usually so-The ores of the district are almost exclusive-.level redgid a no

companied along the fissures by a gangue of barite. Calcite is not very frequent.

dynamo in the engine-house, and thus force is supplied. It is proposed to extend the line southward to Fourteenth street, Prof. N. S. Ecith, the electrical engineer, has charge of the electrically charged rod running from the large ms driw elttings a lo sneem by mettle with an laid, and the conduit between the tracks is simi-lar in appearance to that of cable-reads. The ental purposes. One mile of track has been finished the construction of a roadbed and plant on New Broadway, Oakland, for experi-THE Telepherage Electric Railway Co. have

now in town again for a short time. These gen-tlemen have all been engaged in field-work, but will remain in the city for a time to work up tobamA ni stag sime from some ton beat in the county in the interests of the Bureau, but is interests of the Bureau, into the oil deposits of the State, Melville A. Goodyear, who is also employed by the Min-ing Bureau, has returned from his investigations W . Mr. Metate of the State. Mr. W. State Mineralogist, has returned from a field

amall to carry the river and was enlarged. It will lay bare about 12 miles of the river-bed containing, it is confidently expected, very heavy gold deposits. through about a year ago, but was found too the Feather river is completed. It was put oo leanny base Big Bend tunnel on

ing companies are more than double any of the of gas, water, powder, insurance, and other companies of this city, the dividends of the min-Mivive dividends paid in this city in August aggregated \$228,000 argainst \$205,000 in the same month last year. In the list of dividends among the control of the control o

the company entirely without a margin of

their coal for \$3.75, and the Alice pays \$6, and their salt for \$3.50 per ton, while the Alice is obliged to pay \$15. The Ontario Company get their soal for \$3.55 had the Alice sale for the Utah, has to pay. The ores of the Alloe and Ontario are very much alike, and the processes of treatment similar. The Ontario Co. get silver ores, with a reporter of the Butte Internea Mountain, Supt. Hall spoke of the difference in cost of salt, fuel, etc., that the Ontario mine, In a conversation on the subject of milling

ment of the famous Alice mine state at the mine:

not set ment and the set of the set of set It costs more to mill silver ore in Montans than it does in most places. The July state-ment of the famous Alice mine gives the fol-Cost of Milling Ore in Montana.

The cost of ealt in milling, as will be seen by | yet in spite of these advantages the official re-FS 88'' Wood and coal....

Fio. I.

Fig. 5.

A CALIFORNIA DIAMOND.

оие номовертна ок жи писн - 20

a ton of Ontario ore is \$29, which is \$6.50 more than the total value of Alice ore. the above table, exceeds that of all the labor port shows that the cost of mining and milling

the cost of dead work, insurance, taxes, etc., which superintendent Hall states leaves impossible at present rates. and all that the company needs is a reasonable concession on the part of the railroads to enas in the mine, but still the ore is there, is plenty of ore in the Alice. A great deal of scross dead work has to be done on account of cross ing even. Mr. Hall further stated that there tion in the price of salt a sufficient margin would be left for profit, instead of merely keeptendent Hall declares that with a proper reducdividend while mining at almost exactly one-half the cost of the Great Ontario. Superin-The Alice, therefore, are enabled to declare a

the above table, exceeds the ores.

Per ton.

Per ton.

13 45.

13 45.

Powder, fuse and caps. Oils, etc Sundries Labor and coal.....

are and the cost of mining is angly made up by been, as was also demonstrated by the assay reports, \$22.50. The difference between this fig-This makes the total cost of mining and milling one ton of Alice ore \$14.92. The aver-age of the ore for the last three months as Total cost of mining per teo......

Uiamonds in California.

:ansminequ beti At the last meeting of the San Francisco Microcopical Society, Henry G. Hanks read a paper on "Diamonds in Oalifornia," and exhib-

shet time to the present, these gems have been in over in accessionally found in our State, but sharing a state of the sta about the size of a small pea. It was slightly straw-colored and had convex faces. From Dismonds were discovered in California as early as 1850. In that year Rev. Mr. Lyman of New England saw a crystal in the new gold mines

been allowed to continue a system of concen-tration would have been adopted, resulting in a greater production of gold and platinum, and

Amador, Butte, El Dorado, Mevada in the finding of more diamonds. At the present time we know of the existence of diamonds in five State, as fol-

and Trinity.

It is not yet unlikely that they may be found in California more plentifully than before.

A very beautiful, and, I think, remarkable diamond has lately come into the possession of Mr. J. Z. Davis, a member of this society, and the properties of the possession of the possession of the properties.

solid angles are caused by an apparently second-ary building up of the faces of a perfect cota-hedron, and for the same reason the girdle is channeled edges, the convex faces and the tadt ness ed lliw ti noitanimaxe resolo no tud esnald to besteni slannado eta sbimaryg ett to s somewhat apherical form and the edges the faces seem convex, the whole crystal asin books. You will notice that the general form is that of a regular octahedron but that beaugh to bediness and a dous band ton evad parent, but not without some trifling inclusions and faults. The form of the crystal is unusual. nearly if not quite colorless, perfectly trans-It is bere this evening for your inspection. It was found in Alas Schmitz.

Tobamt, by Mr. A. Schmitz.

It weighs 0.361 grams or 5.570 grains, equal tweighs 0.361 grams or 5.57 grains, equal to 1.571 carses. It is a modified cocabedron, or the second of the second of

the edges of the plates themselves are beveled. than the last. These plates are triangular, but the lines forming the triangles are curved, and The faces seem to be composed of thin plates, overlying each other, and each slightly smaller not a perfect equare but has a somewhat circu-lar form, thus: (See Fig. I.)

The building up of plate upon plate causes It will be seen by the enlarged crystal riowed under the mioroscope, and by the accompanying setch (Fig. 2), that each triangles, and that all formed of four smaller triangles, and that all the lines are slightly curved.

the channeled edges and the somewhat globular form of this exquisite erystal. The following stetches (Figs. 3, and 5) are made from the

larged about 10 diameters. dismond while in the field of the microscope by

lacework of tiny triangles on the faces, raphy, as may be seen by the faint lines formcos of the crystal while in a splastic state. These are the result of the laws of crystallog-A close examination of the crystal will reveal tetrahedral impressions, as if the corners of minute cubes had been imprinted on the sur-

beautiful orystal, which is a gem in two senses, and I hereby protest against its ever being de-filed by contact with the lapidary's wheel. when the stone is placed in the proper light, It would be an act of vandalism to cut this

tempt would more than pay all indebteduess. ei cease edt to noitine of eineand edt teat be file mont eus pour ent teat toer noit en bydereit eine for teat of teat are prominent farmers. Manager Obleyer statday last the Anti-Debris Association held its annual meeting at Maryaville. The new Board of Directors selected is composed of ex-Mayor Stone, N. D. Coombs, B. F. Walton, T. B. Hull and Gavin W. Hutchins. The last four Hull and Gavin W. Hutchins. THE ANTI-DEBRIS ASSOCIATION. -On Satur-

The specimens brought in show free gold in large quantities. promises to excel in richness any find yet. continue to work, and one of them has been rewarded by finding a ledge of rock which discovery has not abated. The prospectors county, says that the excitement over the gold A Disparch from Colton, San Bernardino

Scientific Progress.

Psychic. The Three Forces-Physical, Vital and

[илмвек 6.]

[Written for the Passa.]

tress during he late intercent of the carry of the carry

Invited to the press.]

In or about the year 1846, Hugo von Mohl found, in the cell of an ordinary plant, a precompose a vest-cell. This he between the year 1846, Hugo von Mohl foerwal in the cell of an ordinary plant, a predence of compose a vest-cell. This he between the year 1846, Hugo von beerwed to compose a vest-cell. This he between the year and the germ theory. Bio-plasm, cells, and the germ theory. Bio-plasm, cells, and the germ theory. Bio-plasm (Greek—protes, first), according to Hux-leam (Greek—protes, first), and of cell coroscope, he discovered blasm (Greek—protes, first), and of definite form.

The scum which arose during the process of ferments-ton hear of defence of first own the 1-2000 of an inch to the 1-7000 inch in the end that the form.

A manipulation of attrice of the scarch was taken in the series of series of series and decompose and he arrived series of signer, that the yeast is formed a pears way.

A manipulation of a forming the sugary fluid in which hear and by by a Frenchman, Caignard decompose and hear paper we made the remark that the yeast is formed paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious way.

In a former paper we made the remark that the food of the same curious w

In an address to the British Society of Englinesrs, P. R. Mursey lately said: "The facts in a process to the british south to the brought before you also point to the brought before, you also point to the brought before, you also point to the more! All the brought before, you also point to the more is a brought before, you also world. The same mather of paradise, wrote sidney Smith, leshioned its hexagon with the same mather a paradise, wrote sidney Smith, say the intelligence of the mather and rises here. Six thousand years have added nothing to the sagnet, and the service of the commences as a fire worshiper and rises to a commences as a fire worshiper and rises to a commence as a fire worshiper and rises to a less that the strength of the farmer of the commence of the purrows in the earth, and the thouse of the farmer of 200,000 intelligents. He she have not steamer of 122, and the farmer of 122, and the commence of the complete of the farmer of 122, and the compared of 122, and the compared of 122, and the strength of 122, and the compared of 122, and a last reports in London the end as morning. He share the condens of 122, and a last reports a treeper to compare a desire of 122, and a last reports a send of 122, and a last reports a streeper to compare with a charge of 906 pounds as minding the a machine-gun fitting 12, and 122, and Sab blod otnodraO

Is given off during the process of fermentation. Van Helmont, early in the 16th century, invented the term "gas," and called this particutiar gas if the woods, from its identity with those gases found in caves and out-of-the-way places. In later years it was called fixed air, and was found to be poisonous; itser still it was finally identified with that have and was found to be poisonous; it was finally identified with that and was found on burning charcoal in air.

A New Contround Locomotive.—Mr. John Player, master mechanic of the Central lowa, Player, master mechanic of the Central lowa, who is making for himself an avviable reputation as an inventor and a very successful rail, thon as an inventor and a very successful rail, to possess the requirements of a nordinary chine. The LYX24 cylinders of an ordinary locomotive are utilized as the requirements of an ordinary placed in front, tandem from the connections placed in front, tandem from the connections and air to this arrangement of the steam and air cylinders on a Westinghouse pump. Both valves on each side are worked from the attention will be steam after the connections and air cylinders are provided for the area from the standard and the care are provided to the connections of the connections are confident to the connections of the connection of the standard are provided for the connections of the connection of the connection of the connection of the connection of the care and the connection of the connectio

PRACTICAL WORKNEY.—No man can be said to presente cynneer as an and in surreing.

The Actical Workner.—No man can be said to be a practical workner annies he thoroughly understands the theory as well as the practice of his simple accomplishment of results without he simple accomplishment of results without he whyse and where-fores which lead to their production. Some mules of their trade, and do not aspire to a mules of their trade, and do not aspire to a knowledge of the principles upon which these in their rest. They may be very good artisans in their way; they may be very good artisans in their way; they may be very good artisans in their way; they may be very good artisans in their work.

Some production of the material which makes the great, the rising and progressive splirits of the age.

They way they may be very good artisans of the age.

in air, the content of gas which is found on burning charcoal in air.

Alcohol is developed during the process of carmoration. This was found to consist of carbon, by drogen and cxygen.

Sugar also concounts to the great french chemist, now consist of carbon, by drogen and oxygen.

Lavoisier, the great french chemist, now came on the great french chemist, now came on the great french or instead of constant and charges its combinations. Modern chemists have discovered that Lavoisier, though garded the application of his partly right as regentled by the weight of the augar was represented by the weight of the alcohol and the weight of the augar was represented by the weight of the augar was represented by the weight of the alcohol and the weight of the carbonol and the weight of the carbonol and the weight of the carbonol and the sente for about 95 per cent; two other things are obtained through the cent, two other things are obtained through the cent, two other things are obtained through the cent, two other the for about 95 per cent, two other the content of the carbonol and the carbon of the carbonol and succipic the other five per cent cand succipic the condition of the carbonol and succipic the carbonol.

the other from the conversion of the conversion of the conversion of the property of the conversion of

BURSTING OF FLY-WHEELS,—The bursting of a fly-wheel seems a rather more common event a fly-wheel seems a rather more common event during the leat 20 years. On this account control and set and a mong other things, the use of subject, and, among other things, the use of east-tron arms for built-up wheels and of doveral-wear and of the subject, and, among other things, the use of distributions of these to the rims have been disapproved.

RING-MARKS ON TREES,—The evidence of ring marks in judging of the age of trees should be received with much caution and judgment.

A Mechanical Wonder, or what is called such has recently been devised and constructed for the French may. It is a two-carriage universal lathe which is a complete machine shop spondent suggests the need of an invention for in itself, being capable of performing the most residual points are complete machine shop.

the straing and progressive spirites or the age, and the straing and progressive spirites of the difference in the driving effect of a light hammer when compute based with the blows of a heavy one, or a rusty machine bolt would not remain to be riveted all out of shape, when a six pound sledge would take everything before it. The driving effect from any source seems to require time to act the material. This is noticed and neading up a rivet, where the metal can be worked down into a conernation of the state of a spectring effects of a shape blow, which will be crippled at once under the cribing force of a sledge-hammer.

American locomotives were exported to the number of 58 in the fiscal year 1887, compared with 52 in the preceding year, Mich, with other facts, shows that the American locomotives all holds its own in foreign countries, not withstanding the elaborate and systematic attempts to depreciate it on the part of the orleany of those who feel its competition.

PROPER THICKUESS FOR BOILER PLATES.—
Somewhat we perfect our will can place — The Misling Engineer.

Somewhat we will be cover-sele will order a boiler made of very much too thick sheets; and boiler made of very much too thick sheets; and heat the best said, the sheet while heat of the mater the sheets; and must be passed through them to the water iniside, the sheets would be burned. Or if you would burn or melt them, because the sheets, you would burn or melt them, because the plates would burn or melt them, because the plates would burn or melt them, because the plates would burn or melt them, because the shell it is to be burned and the shell the because once it got it. In the same way, if the plates once it got it. In the same way, if the plates were to be burned and the shell itself injured by the would carry its away or blates with the same way, if the plates are not not oncomy in making a boiler is no outside and the shell insert in the carry in a way, and the choiler is and between the coarry, nor how well, and you will lose as much in the least see as the extra weight of plates much the plates much the plates will last long, or remain tight. It may well, and you will lose as much in the least see as the extra weight of boiler steel to the maje of the season to the carry, nor how well, and you will lose as much in the last long, or remain tight. It may wrench itself to pieces in a very guarantee boiler steel does not give you any guarantee boiler steel of otherway to exposed to steedy heat and not design that the different parts will have to of the water line and not get any circulation, any guarantee and mot design than have the steel well in the best and the water line and or be search of the water line and or the water line and or the same its ruin.—It is not have to it in short of a blowed to develop once defended when he he had designed and or beleved and be blood of the water line and or be such way it is the b

the old hard burned sear.

It you do you will have a scored piston rod
and broken gland bolts some day. Packing
under heat and pressure gets so hard that it
and se soon as one begins to leak, all the old
stuff should be pulled out and new put in its
stuff should be pulled out and new put in its
place.—The Milling Engineer.

ner with a four-horse briar pipe and smoke nutil you happen to think that maybe she water is low. You happen to think that maybe she water is low. It you do these thinks you should notify the coroner that some day his services will be needed, but it is better to easee the practices mentioned by you are a bound the boiler as fast as tioned before the coroner the boiler as fast as sounds like a make's den before you wat until the place.

It you do, you waste heat, which is the same word as money, only differently spelled. Every let of the water leaking from a steam boiler is jet of how water leaking from a steam boiler is jet of how you waste heat, which is the same your would be bankrupt in a short your water leaking the water leaking to the secret we have tell was and what water leaking to the secret short of the book of the control and they never tell any one at a label a secret will come a time, a some boiler is and when they are going to do it beforeband.

Do you take a serve wrenou and you we he with a mith a mith a water will come to once too often and nucle present; and they never tell any one sither will you do, set the strap and neek to the commerting to do but the strap and neek to the compacting to do nit the oil the feore the control of the control of the you do, they the key and do hit the oil the ey lating to the crank pin as it comes to be oyinder, by the book of the control of the oil of you put a the when the piston won't go the oylinder, by the book of the collinder when the you of you while the when the piston won't go the oylinder, by the book of the collinder when the young to the collinder when the piston won't go into the collinder when the piston won't go the oylinder, by the you be secret by the coll bath of the do you will be well a set we will we will be set in will be set we went to be obtained the will we will be set in when the piston rod as and book of the collinder when the set of pecting on the collinder when the piston rod.

It you do you will have a scored piston rod set of the

perter, inbriestion can be had by automatic apparature.

Do you keep an old tin coffee-pot tull of suct no on the eteam cheet, and every time you have nothing else to do pour a dipperful into the steam cheet;

If you do, stop it; get a sight feed only, which will save you the labor of sluming the cylinder and valve seats, the piston and follower, and all other places touched by the grease.

Do you teed up on the poiler nutil the water is out of sight in the glass, then and to off the dead, put in big fire and sit down in a dark corted, put in big fire and sit down in a dark corted, put in big fire and sit down in a dark corted, put in big fire and sit down in a dark corted, put in big into an an experimental and the other states and an experimental and the state and an experimental and the state and an experimental and the state and an experimental and an experimental and the state and an experimental and an expe

Do you take a squirt-can in one hand and project a stream of oil as far as you can throw it, in order to save going to the hole itself?

If you do, don't do it any more; willful waste is downright robbery.

Do you use an oil can at all for oiling, except on emergency, or for the moment?

If you do, don't do it any more, for much better lubrication can be had by antomatic apparatus.

To You Do These Things?

varied operations, auch as mortising, shaping, boring and molding, with the most perfect accuracy. It is wonderfully adapted to the delicate and complicated working of pieces for armor-plating turrets, of balix supports, of rudders, of oranked shafts and of piecos for modern war vessels, and it handles and shapes immess masses of steel almost as skillfully as the care marse messes of steel almost as skillfully as the weight is over 340 tons, and it is driven by a weight is over 340 tons, and it is driven by a receptor carves marsh. A shape in a most stone power angles, A comparison of this an most stone weighing 76 tons, which was considered a mechanical marvel 25 years ago, turnishes a most active in the station of mechanical programmers. MECHANIGAL PROGRESS.

While formerly it was generally held that each concentric ring marked a year in the age of a tree, more careful observation during recent years has positively abown that enoth is not the years has positively abown that send in the trees named, the acse. The following is the trees named, the acse, which were positively known at the time they were out down: Fix hickory II times they were out down: Fix hickory II times they were out down: Fix hickory II times, Kentucky coffee tree, IO years, II tings; burr oak, IO years, St rings; obestnut, 4 years, 7 rings; peach, 8 years, 9 rings; chestnut oak, 24 years, 18 rings.

Адуапсе іп Science.

Poisons—Vegerner and methods,

Poisons—Vegerner and Miveral.

The se a rule, the most violent poisons and the substances that produce the most deleterious effects upon the human system are from the vegetshe feirgdom. The mineral drugs which may be edge streenic, are not especially violent poisons.

There is a considerable amount of poisoning from lead, but not through its medicinal uses; and the same may be said at the present time of mercury. In fine, it is the purely vegetable and the same may be said at the present time of mercury. In fine, it is the purely vegetable for mercury. In fine, it is the purely vegetable for mercury.

The senses induce morbid habits, and enemmy the senses; induce morbid habits, and enemmy the senses, induce morbid habits, and eventur.

MARVELOUS INVENTION IN ELECTRICITY AND PHOTOGRAPHY.—M. Leon Esquille, it is stated, has perfected a marvelous invention in photography. By speaking in a photography. By speaking in a highly-poliabed diaphragm, reflecting a ray of highly-poliabed diaphragm, reflecting a ray of highly-poliabed diaphragm, reflecting a ray of highly is made of it no a traveling and a photograph is made of the photographic tracing is projected by means of an electric arc or oxlydrogen light upon a solenium receiver, the original speech is then heart. It is evident the original speech is then heart. It is evident the original speech is then means of an electric arc or oxlydrogen light upon a solenium receiver, the original speech is then heart. It is evident the original speech is then means of an electric arc or or oxlydrogen light upon a solenium receiver, the original speech is then means of an electric arc or or oxlydrogen light upon a solenium receiver.

Petroleum Fuel vor Thearline Machines,

—Petroleum is new used to generate steam in polities and threshing machines.

The danger from sparks in the use of wood and coal in the vicinity of great quantities of computible matter is very great. The petroleum fires give forth no sparks, and will, therefore, much reduce the hazard of barn burning at much reduce the hazard of barn burning at threshing time.

### GOOD MEALTH,

### Pasteurs Hydrophobia Treatment.

The Medical News or a late date contains a fongely abstract of a regart lately presented to be my by the Britan Commession appoint. Parlament by the Britan Commession appoint od last year to inquire into M. Pasteur's treatment of hydrophobia. From this abstract the ment of hydrophobia. From this abstract the following paragraphs are taken:

"If may bence be deemed certain that M. Pasteur has discovered a method of protection from rabies comparable with thut which vacorimate into a method of protection from rabies comparable with thut which vacorimate from a financial state of the interference of the discovery, whether for its practical protection in the discovery, whether for its practical state of the discovery, whether for its practical state of the discovery whether for its practical particular protection to such the discovery.

thology.

"It shows a new method of inoculation, or, or, the shows a new method of inoculation, the like of which it may become possible to employ for the protection of both men and domestion and include of which it is not both men and domestic applied to the protection of both men and domestic applied of virus."

### The Prophlyactic Period.

The duration of immunity secured by inconInto duration of immunity secured by inconlation is not yet determined, but during the
two years that have passed since it was first
proved there have been no indications of its beproved there have been no indications of its beproved there have provented to the cocurrence of
ing limited. The committee think it is there
ore entain that the inconlations practiced by
I.Y. Fasteur have prevented the occurrence of
hydropholia in a large proportion of those who,
if they had not been so inconlated, would have
died of that disease,
if they had not been so inconlation, even after
This discovery shows it may become one
aible to arrest by inconlation, even after
the infliction of other diseases besides hydrophobin.
Hist researches had say and a superparature of the street of th

His researches have also added very largely to knowledge of the pathology of bydropholes, and supplied a sure measure en desemining prion of rabies was really affected with that disease or not.

The Medical News says, editorially: "The official News says, editorially: "The defort News says, editorially: "The Medical News says, editorially: Testeur's constitutes the ablest defense of M. Pasteur's method which has yet been made, and it is a case for ougsraturation that men so competent to observe facts and weigh evidence have been able, after investigation, to reach a nuanimous able, after investigation, to reach a nuanimous incoulation methods of Pasteur. The appear read in April last before the Paris La paper read in April last before the Paris La paper read in April last before the Parish to made treated, mp to that date, 726 patients the hold treated, mp to that date, 726 patients. Very few failures had occurred, and in nearly very such oase the patient and in nearly until a very late period after the bite. All who were treated within a reasonable period were oured.

SURANDA DATE A PRESENDED FOR WHICH WE STRANDE WARFELD WAY THE STRANDE WITH A SURDED WAY THE STRANDE WAS A SURDED WAY THE STRANDE WAS A SURDED WAY THE STRANDE WAS A SURDED WAS

SPEAD OF DISEASE THROUGH THE MEDIUM OF MILE.—The spread of disease, says the Now York McAtcot Journal, through the medium of milk, hes often been demonstrated, but seldom more strikingly than by an investigation lately purened by the Massachusetts State Board of Gascovering the Gause of an outbreak of typhoid fever that on cause of an outbreak of typhoid fever that of bridge, it was found that all the milk supplied to the district came from one larm at New Hampshire; that on the farm there was a well being used to wash the waser of this well being used to wash the wash of the which a privy vault drained, the waser of the well being used to wash the waser of the which a privy vault drained, the waser of the well being used to wash the well of the that on the farm. The conciliated was the well with the well being used to the farm the well of the wilk, and thus the discussed sick seminated among the people of Cambridge.

FOR DIABETES,—A French physiolen, Dr. Martineau, olaims to have cured 67 cases of distinctineau, olaims to have cured 67 cases of a solution of carbonate of lithis and aresuiste of soda in serated water, used to the exclusion of other drinks.

tates. The liquid portion flows into a bath, there from which it is pumped into the still. Here the crude turpentius is refined. The mouth of the still into barrels ready for abligment, while the text is disobarded from an interest the crude from an interest the crude from the crude in the

SILK MANUMATURE is becoming an industry of growing in the Manumature is person and seeked seekers. The most improved machineary for winding all from the cocoon has recently been set up at the cold, directly demand and the blutching of varieting and in this sity. Givest demands for silk worm eggs are made, and the pulletin of the allworm eggs are made, and the pulletin of allworm outlure has already urn through eight have also been issued in this State. There are have also been issued in this State. There are at this time 395 silk factories in the United have also been issued in this State. There are at the time 355 silk factories in the United States, with 30,000 employes and upward of States, with 30,000 employes and upward of States, with 30,000 employes and upward of the configuration. There is good reason to believe that the silk industries of the become one of the leading ing industries of the country.

Novel Method of hearing the matched of hearing states, and eating her matched of hearing states, and eating her are arounced states arounced residual presented of hearing states arounced and resident relighed on the presting the statements.

MOVEL MEATING DAILMAN ON MEATING MALLWAY OARRAGES.—An entirely new method of heating
trainway earliages from the engine is announced
to be tried on a Pennsylvania railway. The
principle to be adopted is similar to the airpresent as the similar to the order
to the brake system, and it is argued that
for the brake system, and it is argued that
for the brake system, and it is argued that
box of the engine. There is always plenty to
box of the engine. There is always plenty to
spare, and, in fact, large quantities are wasted.
The hot-sir method would cause no danger, because, if any break cocurred, there would do no
possible chance of free or explosion. Of course,
if this plan is adopted, all locomotives would
it this plan is adopted, all locomotives would
it out.

PETENDEMM WELLS IN TWO STATES,—Acconding to the certain seeinates, 53,000 wells have been a factor of the certain sees, 53,000 wells have been diffilled in Pennsylvania and Mew York alone diffilled in Pennsylvania and Mew York alone of see the cost of \$300.000,000. This represented a profit to \$500,000,000. This represented a profit to the producer of \$300,000,000. The see been as the count of oil exported is placed at 6,281,102,-301,823,200,000 bave been as a school of the producer of see the produced in machinery and drilling. This does not include the millions represented in the natural gas include the millions represented in the natural gas include the \$50,000,000 the produces, there are alone \$50,000,000 the millions represented in the natural gas inclusion in the natural gas plants in the natural gas plants in the rest of the producer.

THE FIRST USES OF MATURAL GAS.—Natural TRE TREY [72].

Eas was first made good use of in the year [82], when some enterprising citizens of Fredonia, Chantanqua county, M. Y., devised a method bed for utilizing, in a small way, the gas which in the noighborhood of the twom. A small well was bored in the the village to the depth of 27 feet, was bored in the way and the gas conducted through pipes to the paper of the paper of the gas conducted through pipes to the paper of the gas conducted through pipes to the paper of the gas conducted through pipes to the paper of the gas conducted through pipes to the paper of the gas conducted through pipes shore.

METAL WECKTIES,—Soaris and necklies of motal are a new German invention. Gold, plating are a new German invention, described, after the mossic style, upon a metal ground, prepared by means of powerful presses, and finally elongated by rolling into long after or yellow, red, green, white, gray and black, and the scaris, being indestructible, are considered of practical value.

REFRESHING DRINK.—Pour one quark of boiling water on 14 pounds of sugar, one-half pint of notasses, two ounces of stratifications coid, bottle and cork tight and keep in a cool appace. When wanted to use, take three teatspace. When wanted to use, take three to a sponfuls of this syrup in three-fourths of the syrup in three-fourths of a teatumbler of water, put in one-fourth of a teatumbler of water, put in one-fourth of a teatumbler of sugar and trink immediately.

A COMBINATION MAIL AND SCREW.—An Eastern inventor has devised a new screw—anyline is said to beat balf nail, half screw—which is said to beat two blows of the hammer, two turns of the screwdriver, and it is in. Its holding power in white pine is said to be 332 pounds against 298 pounds, the holding power of the present screw.

The Oireovertion of the Blood through the lines was first announced to the world by Mitches Servetus, a French physician, in 1553. Cisalpinus published as account of the general oirculation through the system in 1569; but his ideas were somewhat confused. It was not fully understood, however, until Harvey took it in hand in 1628.

Calico was first imported into England by the East India Company in 1631. Calico print-ing and the Dutch loom engine were first intro-duced into England in 1676—45 years later.

POLISHED GRANITE is much more durable than bammered granife. Polishing the stone prevents the lodging of moisture and foreign particles on its surface.

Women as Inventors,—QD to Dec. 1s 1886, there had been granted to women by th United States, letters patent for 1935 inven sions.

The First Street Railway in America was completed in New York City in 1832.

pesudo-science of satrology. For a long period astronomy was made the mere the mental of the period astronomy was made the mere the mental of services our destiny is the latter has now our trology, and although the latter has now our trology, and although the latter has now our connected with the starty and planetary worlds. The present time, who believe our destiny is the perest, which the starty and planetary worlds. Experient of the starty and planetary worlds. Experient of the starty and planetary worlds. Subject of the destinant of the start of the starty of the startology and the startology are a satrology. And escape the planetary and an astronomical posses, and cheer the their species, and they continued to hold any season of the satrology. And even author of an astronomical posses, and cheer they was accordingly cultivated with great ardor by an astronomy, and become well-infection which in his time had become well-infection which in his time had become well-infection which in his time had become well-infection which in his time bad become well-order to this destinant of the sarty Christian takeners of the cayle of the dototre of transpective devoted to this delusion. Resions capecity devoted to this delusion. Resions devoted to the destinance of the sarty the weakness of sevence and Kepler as a cience, but could not state off the horoundary transpection of the planete and the qualities of the order of the devoted to this delusion. According to the destinance of the cayle of the dototre of the cayle of the dototre of the dovote of the dototre of the dototre of the dovote

### USEFUL INFORMATION,

A MINER'S UMBRELLA.—John B. Carr of Upper Lehigh, Ps., a miner who has worked in the mines for a number of years, and knowing the mines for a number of years, and knowing the mines for a number of years, and knowing the mines for a number of years, and knowing the water of the professity which is often feel as a carbiness of markening appropriate a carbiness of which we think will certainly supply a long feel which we think will certainly supply a long feel which we have an instrument which he calls a Carbella, which we have a stand with four legs, or other the root of pipe, with a number of the root is a stand with four legs, or the root of pipe, which a set serve which is an upright made of gas pipe. Over this upright a large piece of pipe, which a set serve which is an upright, made of which the root. On the end of this pipe the right of the root. On the end of which is factored according to of any size to fit whetever place a party may be of say size to fit intering and actil may with the working it does not interine in any way with a law of the miner in drilling or leading, and still keeps him perfectly dry, and when a blact is to be fired it takes but a minute to relate the to be fired it takes but a minute to relate the vole of the miner in drilling or leading.

The state of the consequence of the continue o ing the heat 13 years the United.—Durande,—Durande,—Durande,—Durande de States has 1 ing the heat 13 years the United States has doubled its railroad mileage, while in 20 years tecord is nothing more than a fair evidence of tripled the iron roadways of 1867. That record is nothing more than a fair evidence of the American growth and progress generally. We have the world in locomotive-building, not only in the number turned out from our shops, of the machines. As an evidence of this it may be stated that we not only supply the large of the machines. As an evidence of this it may be stated that we not only supply the large inneachines. As an evidence of this it may not also the stated that we not only supply the large inneachines. There were 34 locomotives for foreign countries. There were 34 locomotives for foreign from the United States during the ortesponding period of the preceddring with May 31, 1887, compared with 51 during the ourseponding period of the preceddring the ourseponding period of the preceddring the ourseponding period of the preceddring where 379 respected on the number of 12,248 and 9379 respectively.

A B C of Astronomy - No. 3.

[Written for the Pansa by Anraon.]

The next circumpolar constellation which merits our attention is Coppeus. The follow-ing diagram will belp you to locate it:

Polar Star.

You will observe that the constellation consists and the state of a large oriols between Cassiopers a state principally of three stars, forming a segment of a large oriols between Cassiopers and the pole star. B in Captons is a double star of the first magnitudes, [The disca stars are a seried, according to their brightness, as tender and arbitrary. The substitude, the scoond magnitudes the scoond magnitudes are succeeded to the first magnitudes are are substituted and arbitrary. The substitutes are described the magnitudes are are all structured and polow that are extensions of the first magnitudes. The northern are neared as follows:

The northern with stars of the first magnitudes the former having 14, the latter only seven. The northern are neared as follows:

L. Strings in Orion.

S. Arcturus in the Casser Dog (Canis Major).

J. Stivel in Orion.

S. Arcturus in the Casser Dog (Canis Major).

S. Arcturus in the Casser Dog (Canis Major).

J. Stivel in the Casser Dog (Canis Major).

J. Stoop in the Casser Dog (Canis Major).

J. Stivel in the Casser Dog (Canis Major).

J. Stivel in the Casser Dog (Canis Major).

J. Stivel in the Casser Dog (Canis Major).

J. Stoop in the Casser Dog (Canis Major).

J. Stoop or a sasist us. This is a select or the satisface of the cardinal and warring a seasist us. This is a select or the satisface of the cardinal and with the cases of savering the cases of the double and variable stars. Where the case of buying a second "schomed language of the individual and the case of the casses of the

Mining Summery.

Late of the company has considered, the company of second control for the company because in the company because price the sum of \$445.

Weether the mine will ever be worked by the present instead on the purchase, and that under this regime the property set in the company because price the sum of \$445.

Whether the mine will ever be worked by the present on the company because the company is a matter of great doubt with many, whether the mine will ever be worked by the present of the company because the property are set in it be present and well and the company because the property are the property are in the company continued to the present and well there with the terms of the company in a distribution to contemplate the workmen to run any lutter stolers are the payment of the balance. At the because the payment of the balance of the property are contemplate the company needed, as it was the workment to run any lutter stolers and continued. A pipe city some time ago—but. Taylor—is in Taylor—is the property the contemplate the company in a distribution to the balance of the property is a probable that the owners would let the mine go, been made to the payment of the property in which it is got of eart in the terms of the property at this depth, and start the militage stolers of the company coop paid to also. John Tregloan, Sen, who this week the complete fact of the company are stolered in the mine at the company of the company OALIFORNIA.

Свівтегав.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

San Bernardino.

Mashoe District.

West drift from the shaft has been advanced and hast drift from the shaft has been advanced and has been advanced and has been actended to feet. In this drift to first the factor of the standed to feet. In the shaft it of base been extended to feet. In the shaft it of the base been extended to feet. The sact of rossout ing next week when this drift shall new reached the feet. Duction this level has been extended to feet. Duction this level has been extended to feet. Duction the feet in the shaft was such boundary, will crossout east and west from 19 feet. The tace of this crossout less may be such drift was advanced ts feet and the east crossout hot is has been extended to also like as to constant in the strom 1900 level east crossout No. I has been extended to the last feet in quarts that is of low that which gives occasional high assays.

SAVAGE.—On the 500 level east crossout No. 6

East crossout No

### Washoe District.

iniling and tuns from \$50 to \$40 per ton.

Thoulumne:

ALE.—Sonora. Democrat. Aug. 37: The final assis of the Ham & Birney quartz mine base been consummented. It was bought by an Euglish commocrat. Aug. 37: The parties now holding about on the holding and tuns for a sale of the Ham & Birney quartz mine base been consummented. It was bought by an Euglish commocrat. Aug. 37: The parties now holding a bond on the Hyde mine, six miles east of Sonora Demy.

Weak, Aug. 37: The parties now holding a bond on the Hyde mine, six miles east of Sonora Demy. It consumments the hyde mine is a secondary of the nature and concepting to the nature and beat dead of the fact that the mill machineg and in the law sets a fulcing men of this consumment. The mill has been the law for the law sets and corresponding power at the low for each revolution of the eccentric shalf, giving included the fact of the consumment of the same factors. The eccentric shalf, giving for each revolution of the eccentric shalf, giving included the fact of the parties of the work—included the same factors. The end corresponding power at the low for each revolution of the eccentric shalf, giving power is the laws, the point where the complete on large quantities, are the comparties and corresponding power at the low-free fire of the same of the same strike the work—included the same farmatice, are the compartines and corresponding power at the low-great large and corresponding power at the low-great strength is a section of the supplierty of all the corons of the work—alvest, whith 25 pounds serves as a fulcerum, giving great fact of the given on a general secure on the pareity as a sell-dealy mending is a fact weight to do one by great, and weigh to op ounder, reaghired and weigh on one givine the largest seame work. The concentration of the supplinets is a same work. The concentration of the seam of the pareity of the mill is to one of the bow of the seam of the same of the supplimental and weigh one of the power. The concentration of the supplimental an

This mine is in the same range as the rich mines of and prospects even hetter than near the antises of Tris mine is in the same range as the rich mines of the bookwood.

RICH ROCK,—Mr. J. T. Weyand thom Deadwood reports good progress on his mine there. It will be the propers good progress on his mine old Enterprise mine, ledge of very rich rock in this old Enterprise mine, ledge of very rich rock in the old Enterprise mine, was with a form of the rock in this old Enterprise mine, ledge of very rich rock in the old Enterprise mine, was made to a form of the same though small is very rich; selected rock in the rock in the rock in the book of the same that of rock, and the rock in the rock pays \$250 to the ron; one crucining to the rom; the rock pays \$250 to the ron; one crucining of the rock proceed so the rock in the rock in the rock pays \$250 to the ron; one crucining of the rock in the rock in the rock pays \$250 to the ron; one crucining of the rock in the rock pays \$250 to the ron; one crucining of the rock in the rock in the rock pays \$250 to the ron; one crucining of the rock pays \$250 to the ron; one crucining of the rock pays \$250 to the ron; one crucining out well.

The vent and the room in view in the rock in the rock pays of the room of the rock in the rock which is and beying parallel with the one on which they but the borton of the main rock post in the rock in the round in only by the seam which the miners miscoped to the room in only by the seam which the miners miscoped to the rock in the rock of the ro

A PROSPECT TRANSFERRED.—Mr. Clarence A PROSPECT TRANSFERRED.—Mr. Clarence Hugges described in the professed of Mr. Harvey Springelead his one-ball interest in the Daisy mine, situated near the Trinity river, a short distance below the mouth the Trinity river, a short distance below the mouth of Eastman guide and on the opposite bark of the river. The owners have sunk a shaft to the depth river. The owners have sunk a shaft to the depth and a contract of the form of the form of the contract of the contract

permanence and richness of the quartz deposits. Shattuck has closed his mill, as the water-supply is braufficient, but he is working his mine and at staking out some very rich rock from the Magdalene. M. Shepardson has struck a very good prospect on Claphoard guich on the headwaters of Knigsburguich; he has found a two-foot ledge which is very guich; he has found a two-foot ledge which is very guich; he has found a two-foot ledge which is very guich; he has found a two-foot ledge which is very found; he has being done on mmerous other losestons and several good mines will undoubtedly be developed,

Sonome.

Sonome.

Sonome.

The GUALALA COPPER MINE.—Sonome Downford:

J. C. Cox, superintendent of the Gualela
sample of one to this office Thursday. He says that
he mine is being rapidly developed. A shaft his
been sum set feet and the main tunnel is 250 feet in
length. collong weighed is once on the british in the complete of the british in the brit

Trinity.

and very rich.

FLOERECE.—During the past week arrangements have been made and work commenced on the new mill for the Florence mine. The company will build a ro-stamp mill under the management of S. M. Wilcox and Geo. Black. A number of men have been employed and every effort will be put forth to mine is about seven miles in a southerly direction from Sierra City. The ledge is about five feet thick and prospects very well all through. The owners of from Sierra City. The ledge is about five feet thick and be prospects very well all through. The owners of T. Mooney and S. Stephenson.

Stephenson.

Stephenson.

Stephenson.

Stephenson.

All Stephenson.

Stephenson.

Stephenson.

SIERRA CITY.—Mountain Massenger, Aug. 27:
During the past few weeks some very rich gravel
has been taken out at the toot mine and the indications are that the owners may vert as a rich harvest. They have been prospecting in this mine for
the past to years and are confident that the right
lead has been found. Geo. Fletcher has gone to
the forest King, at Gold Lake, to take charge of the
building of the mill. It will be remembered by the
readers of the Messenger, that some time ago I spoke
of striking the ledge in the lower tunnel. It was
building of the mill. It will be remembered by the
readers of the Messenger, that some time ago I spoke
of striking the ledge in the lower tunnel. It was
not soon after. It is now rumored that the ledge
of striking the ledge in the lower tunnel. It was
and very rich.

FLORENCE.—During the past week arrangements

AT CALIGO.—Print, Aug. a8: From good auhority we learn that it is the intention of Col. C.

M. Sanger and his associates to rebuild the new 60instant. The boilers and some portion of the right
instant. The boilers and some portion of the main
instant. The boilers and some portion of the main
instant. The boilers and some portion of the main
which had not been put in piece. As the cloundation to the listge structure is already prepared, the
tion to the listge structure is already prepared, the
tion to the listge structure is already prepared, the
tion to the listge structure is already prepared, the
ting of the mill can be accomplished within
three or four months. Immediately after the burntore of the mill and were set to work again in a few
days, after it had been determined by the company
to rebuild. This news is very encouraging to the
lively and prosperous season this fall and whiter,
to rebuild. This news is very encouraging to the
twint good hopes of a continuation of better times
with good hopes of a continuation of better times
thereafter. The town has been very dull this summer, and, it is some respects, ever since the large
toreed down. The King mine also
closed down. The King mine with good to fise town the principal
closed down. The King mine will ensure. There are several other
forced in men were discharged and the King mine
closed down. The King mine was the principal
better times will ensure. There are several other
proper of the town has down the will
ere long be developed in good shape and given employment to a large force of men, which will add
ployered it of he prospect in good shape and given employer of the immediate vicinity of the town that will
ere long be developed in good shape and given employered in the immediate vicinity of the town that will
and the immediate vicinity of the town that will
be a large force of men, which will add
and a large force of men, which will add
and a large force of men, which will
and the mill and the proper of the complete of the man which w Sierra.

and saving the sulphurets. The so-stamp mill is bounded that a heavy fire was raging in the by water-power and crushes 60 tons of one in again that be discounded to the Southern Eureka mine.

MOUNTAIN TOWNSHIP.—Cor. Placetville Observ.

Ry Aug. 90: There is a lively feeling in quarts face the sabouts had been consumed, solding the spanions for work are quite from the solding and that the fire had spread in nearly every direction. The mill as a lively feeling in quarts (The mill had been falle for some time, and, freetfore, and proparations or work are quite and that the fire had spread in nearly every direction. Solding in quarts are attracted to the solding for work are quite from the form of the constraints of Cap's Cossillar, on the north fork of the free was the fire had spread in nearly every direction. Solding for work are quite in the fire had spread in nearly every direction. Solding for work are quite and that the fire had spread in nearly every direction. The mill was owned by consumed and the forter, worked a few days and took out some an old herder, worked a few days and took out some an old herder, worked as few days and took out some and the form of the properties of the solding of captive of the consumed.

Base transported to the constraint of the constra

PANY FORK.—Trinity Journal, Aug. 27. Quartz he colleged and getting fine prospects, interests in the valley are more than bolding their uras are obtained.

When the contained with the character of the character of the contained with the character of the character of

Avergence of the mineral recent complete to the mineral reconcers of the recent of the recent of the mineral reconcers of the recent PIRMES.

NORTH FORK.—Cor. Greenville Bulletin, Ang and Tone Greenville Bulletin, Ang ay: The mines are looking up as little. The Buff some men and taking on the Vanderpool ledge sinking an information from the Vanderpool ledge sinking an information factor of the Vanderpool ledge sinking an information for some of the Vanderpool ledge sinking an information for the Vanderpool of Va Navada May Source the person of the control of the

levels to tap the ore bodies, found in the Crown Point.

BULLION.—Good headway is making in the cleaning and rook out and round in the Crown ing out and relumbering of the old buchanan staft.

BULLION.—Good headway is making in the taz level are to a favorable vehic branch of the ago and too perceive in the tage of the ago and too perceive in the arth on the 1300 level.

BALTIMORE.—Still extracting one of a good milling grade from the tage of evel.

BALTIMORE.—Still extracting west from the main ing grade from the too level.

BENTON.—Are crosscatting west from the main occupant on the 785 level.

BENTON.—Are crosscatting west from the main the grade from the too level.

BENTON.—Are crosscatting west from the main occupant of the safe of the

men to work.

BOMANNA AND (VASTER,—COT. Challs Mistorier, and to work.

JOHAO.

JOHAO.

JOHAO.

BOMANNA AND (VASTER,—COT. Challs Mistorier, and to work.

JOHAO.

JOHA

And the property of the proper

weeks.

Sydnky Cox,—The shaft is now down 110 feet with water essaly bandled. The shaft which has been sunk vertically was started against the south with wall of the vein with the idea that the vein would dip toward the south, but it continued nearly wertical toward the south, but it continued nearly wertical toward to sail staff to the act until at 55 feet it dipped out of the shaft to the north. When the shaft to the region which, as a crosscut north will be run to the vein, which, as been before resoling it.

WEST GEANUITE.—The shaft on the Rattlesnake is down too feet; it will be continued ten feet further for a sump, and then, after a station has been the for tor a sump, and then, after a station has been the for the south of the bottom of the shaft is still the soft prophytytic granite neutrinosed in our last, with occasional bunches of quarts eartying some value, and with considerable soft decomposed feldspathic rock.

erected. The ten stamps treat about ay tons of ore dealty. Other properties in the district are looking well and work is active on all of them.

SAN FRANCISCO CON.—The beadings of the various workings continue in the exception of the tunnel, industry white statistics white some of the tunnel, ported in our fast, with the exception of the tunnel, ported in our fast, with the continue in the exception of the tunnel, it is lightly exception of the tunnel. The exact of one of a tunnel in the fact that are soon outside the many berractory tound, being full of tuby and native salver and black sulphurer of livers, and so well as statistic of the tunnel is in the feet under the same conditions. The point whore it was first encountered, and the west being the same conditions. The statistic of the bardest character possible, which the will be exactly the same conditions. The took well than above and from the old levels in great quantition will be put in at the tyo-loot station.

Hors.—Attill continues its operations, and the wine treatment the bright indications of the last few week.

HORSE LINIMENT,

H.H.H.

### PULVERIZER PNEUMATIC

### POWERFUL OPPOSING CURRENTS

Of dry super-heated steam, so arranged that they continuously obarge themselves with ornshed or granulated material, and by the great force and velocity of the steam currents the universite size dashed septicate can be desired to the steam currents of the control of the super-heated steam currents emproyed, through the control of the super-heated steam currents emproyed, through which every minute particle of ore must be seed from to become very more steam currents emproyed, through which every minute particle of ore must general from the company and simplifying the controlling rusty dold. The light weight and aim piletty of construction of the Pulverish, the extremely small and inexpensive wearing parts, are the WONDER and SURPRISE of all who without produces a persion. The Company is prepared to furnish complete plants for pulverishing and surrents and simplifying the company is prepared to furnish complete plants for pulverishing the control of the

10 TO 200 TONS PER DAY,

Including a Sectional Steam Boiler supplying all the power required.

### PNEUMATIC PULVERIZER COMPANY,

2 and 4 Stone Street, NEW YORK.

F. A. LUCKENBACH, Sup't.

### JANOITAN MOBKS

N. W. Corner Main and Howard Sts., San Francisco,

### and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES. CASTINGS AND FORGINGS OF EVERY

ALL WORK TESTED AND GUARANTEED,

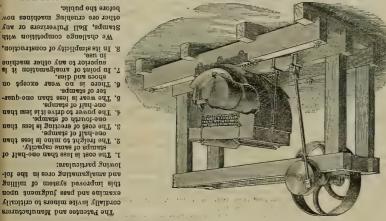
IMPROVED PORTABLE HOISTING ENGINES.

### NATIONAL ROCKER QUARTZ MILL,

KENDALL'S PATENT, AUGUST 24, 1886.

CAPACITY, 12 Tons in 24 Hours, 3 H. P.

The Patentee and Manulacturers Vilesitive of sensing striction of Vilesitive of sensing strictions MARSHUTZ & CANTRELL, Sole Manufacturers.



Send for Circulars and Price List.

mps, Ball Pulverize

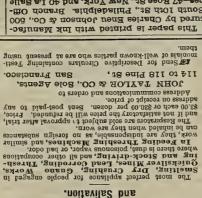
We challenge competition with



PATENT

### Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

and Salivation.



South 10th St., Full adel Johnson & Co., 500 South 10th St., Fulladelphie. Branch Offi-ces-47 Rose St., New York, and 40 La Sal-St., Ohicego. Agent for the Pacific Cossit— Joseph H. Dorety, 529 Commercial St., S. F. This paper is printed with ink Manufa

American Exchange Hotel,

Sectional Year of Purverizer.



CHAS. & WM. MONTGOMERY, Prop'rs.

MACHINE SHOP AND FOUNDRY

### FOR SALE CHEAP.

Everything in complete running order; situated in the riving twom of Gridley on the dived dreatment will be and of at accrifice, as the owner wishes to tire from business. For further particulars, address g. STAUNDISH, G. STAINDISH, G. STAI

### THE BUSSELL PROCESS COMP'Y.

C. A. STETEFELDT, President.

NEW YORK OFFICE, 18 BROADWAY

THE GIANT POWDER COMPANY AND FOREIGN FATENT SOLICITORS, TO AN ET & COAN
AND FOREIGN FATENT SOLICITORS, 10 to Designate freeden
and Obscied. Established in 1860. Their long experience as
and Obscied and into present the Associatory complex
they come obtain despitate. Being dividently of the accordance of into a
the Association of the Mixing AND SOLICITOR OF THE SOLICITO

The Salest and Strongest High Explosives in the Market.

GIVAL SOMDER OF DYNAMITE,

Of Different Strengths as Required.

California Inventors Spould consult

Constantly on hand a full assortment of Manila Rope, iss Fope, Tarred Manila Rope, Hay Bone, Whale etc, etc.

Extra sizes and lengths made to order on short notice

TUBES & CO.

Established 1856.

San Francisco Cordage Factory.

logue, 17 and 19 Fremont St., San Francisco.

CAW MILLS AND MACHINERY

YNATMOD WAS

N. W. SPAULDING For Sale by all druggists.

THE H. H. Horse thindent pure for the first property of the first

38HOH 6

611 and 613 Front St., San Francisco.

SWES

отколучк

CHIZEL BIT

diooT boirdan

SPAULDING'S

GELATINE DYNAMITE, Stronger than Dynamite and even Safet in Handling.

10DSON FOWDER IMPROVED.

YOR KALLROADS AND LAND CIFFARMED, as the condinary Blasting Powder and runs as freely.

To Browder and insert, It is as dry as the ordinary Blasting Powder and runs as freely.

BANDMANN, NIELSEN & CO.,

GENERAL AGENTS, SAN FRANCISCO, CAL

MACHINERY

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc. SLEVW ENCINES'

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco. GENERAL MACHINE WORK,

PERFECT PULLEYS

Sole Licensed Manufacturers of the First Premium Awarded at Mechanics' Fair, 1884.

Medart Patent Wronght Rim Pulley

Sakese of California, Organ and Arizona. Lightest, Strongest, Chespest and Montana, Wyoming, Utah and Arizona. Lightest, Strongest, Chespest and Best Balanced Pul-sy in the World. Also Manufacturers of Arizona and Arizona SHAFTING,

Nos. 129 & 131 Fremont Street,

IRON CASTINGS of all descriptions. CAR MHEETS CHIPPED

AND RAILROAD CASTINGS.

OCCIDENTAL FOUNDRY, 137 First 51, San Francisco, Cal. CHYS' B' STEIGER MEDAL AWARDED, MECHANICS' FAIR.

IVS' M' KEKE'

24 Post St. B. W COLLEGE

### Aetallurgy and Ores.

### SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office. COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

ENGINES, BLUESTONE, LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

### JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GIVSSMYKE VND SNNDKIES' ELC CHEMICAT VELVENTAS VND CHEMICATS' DENO

Our Ool and sheel Tholes anowne a new subset of the bloom of the state of the state

### Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

Mear First and Market Streets, S. F.

Ores worked by any Process.

Working Tests (practical) Made. Flans and Specifications furnished for the Assaying in all its Branches, Waters, etc.

Special attention paid to Examinations Mines; Plans and Reports furnished. nost suitable Process for Working Ores

O. A. LUCKHARDT & OO., Mining Engineers and Metallurgists.

### METALLURGICAL WORKS.

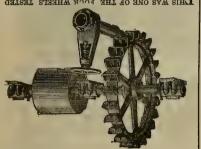
318 Pine St. (Basement,

er of Leldesdorff Street, - SAN FRANCISCO

Assaying and Analysis of Ores, Minerals and Waters, Mines Examined and Reported on Practical Instruction given Treating Ores by in Ores Sampled and Assayed, and Tests made by my

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



L. A. PELTON, Nevede Olty, Oal. Aerris—PARKE & LACY, 21 and 28 Fremont Street an Francisco, Cal.

L. PETERSON, MODEL MAKER, INVENTORS, TAKE

253 Market St., N. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin copper and breas,

QUARTZ MILL, Huntington Centrifugal

SEND FOR CATALOGUE TO

1165 and TROMMELS.

TRAMWAYS.

MIKE ROPE

HALLIDIE'S

HOISTING

COBNISH BOFFS'

ENGINES AND BOILERS.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES. SEED FOR CATALOGUE AND TESTINOUIALS

PUMPING

**ENCINEZ** 

ing smelting works

This Mill as a Crusher and Pul-verizer is without rival, le in operation in lead-

STURTEVANT MILL.

MACHINERY,

CORNIZH

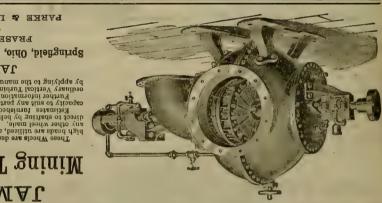
'Sawna

NEW YORK OFFICE:

BOOM 48, No. 3 Wall Street. GENERAL OFFICE AND WORKS: Fulton and Union Streets, Chicago, III.

DTAH OFFICE-SALT LAKE CITY, UTAH. MEXICO OFFICE: No. 11 Calle de Justez, Ohibushus, Mexico.

These Wheels are designed for all purposes where limited quantities of water and high beads are utilized, and are guaranteed to give more power with less water than other where lands. Buth, the power is transmitted direct to abstincts unnished on application for wheels specially built and adapted in expectly to suft any being, disponsing with gearing. Further information can application for wheels specially built and adapted in expectly to suft any other particular case. Our property of the suffer of Mining Turbine Water Wheel.



### COLD MINERS

Quartz, Gravel and Placer Mines!

**AMALGAMATING** PLATES

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Old Mining Plates Bought, Replated, or Gold Separated.

San Francisco Gold, Silver & Nickel Plating Works,

FRASER & CHALMERS, General Agents,
Obicago, Ill., and Denver, Col

JAMES LEFFEL & CO.,

SIBLE LEFFEL'S

No. 248 Elghteenth Street, Denver, Colorado.

or 110 Liberty St., New York.

663 and 665 Mission st., san Francisco, Cal.

NOTICE,—My Silver-Plated Plates are well known and need everywhere. They have proved superior to all others in durability i weight of Silver.

CHEMICAL LABORATORY, THOMAS PRICE'S ASSAY OFFICE,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

ETC., ETC.

ASSAYERS, CHEMISTS,

**WINEBALOGISTS, MINERS,** IMPORTANT TO METALLURGISTS,

Industrial Publishers, Booksellers, and Importers, HENRY CAREY BAIRD & CO.

A . S . U . e Taligadelphia, Ta., U. S. A.

### MINING SHAREHOLDERS' DIRECTORY.

COMPILED EVERT THURSDAY FROM ADVERTISEMENTS IN MINING AND SCIENTIFIC PRESS AND OTHER S.

	mierrone A	ML	O Ter more	40	11.0.10	Gunno	Teormine T	and the state of	,	
	.8	HINOW	BHRHI	LIHIN :	DS-M	DEN	LEST DIV	ΑJ		1
9 4q98				10M 608	anoias	C M S	California California Nevada		Booker Con & Morth Occide	
8 dqsg.	.isunaA	35	Sonsome Sansome	926	по	sbu <b>L A</b> sbu <b>L A</b>	airrotifeO	IN CO	Alaska M Co.	ı.
G DATE,	MEETIN	, " <u>ar</u> ")	FIOR IN B	TO.	,YAAT	BEORE	LOGATION.	ZNATMOU	MAME OF	1 2
			EID.	O BE H	INGS 1	THEI	XI.			1
99 Montgomery St		Э Виск		08 guA	July 27	TS	S sittotnis 2	o	Venus M Co.	i
99 Montgomery St	)E	J Scoville	Aes tqea		SZ ZUA		. Nevada 2.	M Co	Utah Con Bl	1
38 giarolilaD 608.	νπ	M Buffingto	L . 12 350	), 6 15(				OCK COR M CO		
39 Montgomery 8t	ε3	H Holmes.	Aug 29. E	8 NA	T viul	06	. Nevada, .68.,		SAVAGE M CO.	н
38 emosnas 028		E Berier			L., GI VIUI	****	18 sbave M. I simmoli	D.oD M requed of	Sierra Nevad: San Francisco	н
18 gramoganoM et	96	E Elliott	O., UK 15O	ue ages	81 ZuA	bc	82absveVI.		Potosi M Co.	
99 Montgomery St	E3	J Scoville	L., 0 450.	Sept 15	1.61 BuA	10	Yevada., 2	Con M Go	Phil Sheridar	
8 Montgomery 8t		76 ilO J V	W., &L dgek		July II.		Arizons., 7.,		M noo Leni4	1 -
38 vremogración 96 38 sinvolúsO \$1\$.	00	B Holmes.	DIS 45C		or yak		83 abaye M.	0,5	M & nemread	1.
38 signofiled 919,	,,	Stadtfeld J	Gept 19 9		July 15.	80	. Nevada 2	M. Co	Orleans Con	1
330 Pine 8t	*** *****	E Luty	A., OS dqə8	Lug 31	July 21		8 врвувИ.	tone S M Co	Original Key	ŀ
Montgomery St		Mortzio			li zua	97	icainioina	D	N EX OFFP IN	1
38 eniT 055		B Mahahalin.	L08 30 A		any 6.	···gt	. Nevada. 2.	M Co	uste gaiaroM	1-
38 Vientgomery St.	e3	E Ell oft	O08 BuA	0I Bul	111 6: . L	GZ	. Ac 86 avs V.	S M Co	Mexi an G &	н
Phelan Building	g	Wetzel	Oct 10, T		Aug 15.		01gintotila		Golden Fleec	1
98 Montgomery 86	ne	E Elliott,	7 . d 1498	G Jack	July 6	02 01	. PK abave M.		Exchequer M.	1
98 Montgomery St	JE	E Ellioce	Oct 18,, C	62 4q98	Aug 22.	uč .	. CY EDRYS M.		Chollar M Co	
2 Montgomery St		V B Lake	W. S tqek	Oct 4	Aug 26.		alifornia26.	ide West G M Co	Observated A v v v v v v v v v v v v v v v v v v	
Montgomery 8t		Wetzel	T 12 10		a de gua	OG .	85aba.9M.,		Best & Belch	н
39 Montgomery St	E	Ospora	I. IS tgas	81 BuA	L Kint	20	6 giarotila	D	Bulwer Con I	1
38 aniq 088		M Kent	T es 4q98	dept 8	Aug 2		fsigrolile		Baker Divide	ш
38 anis 738 90 die view of the control of the c	8	R Grayson,	D & 450	af tge8	Aug 12.		EE Sbave M.		Rullion M Colling	١.
9 Моневотегу Ве	0830	E Elliott.,	O'F 35. C	Oct 4	. ta gua	20.	. LY EVACIA ZZ.,		Alpha Con M	1 2
9 Montgomery St	)E	Burris	Get 13 E	0g tq98	3., &I gu A		Mevada, 32.		O M S sebut	1
32 omoans 028		nosbut.1					.a sinrolifs.		Alaska M Co	
LACE OF BUSINES	A AH	SECRETA	_				.oM .noitade	"1	COMPANY.	14
			- 1	MENTS	SSESS	A			-	L

### PACIFIC COAST WEATHER FOR THE WEEK,

for publication in this paper by Melson Gorom, Sergeant Signal Service Corps, U. S. A ]	bedslave [Furnished

														race of rainfall.													
	8948		ime)	e, ours,	unese	Sun Our o	111 E	ng en	a ur	ilali	non als	- Gl. for olear; Oy., cloudy; Fr., fair; Fy., foggy; - Oy. town of mount of method of the olean olean of the olean olean olean olean olean olean ole															
			1	00.			1	100*	1		11111	100	1			100,	1	1	1	J.	1	1		Ç₽°	Total		
			-	00.	EF.								-							_	CZ.	8	89	***	Wednesday		
	Cr	ΔA	89			WS	1	00,	GI.			00.	CI	WW		00°	'ID	N		00.		~	-				
	GF	M S	02	00*	Cy.	MS	02	00°	CI"	Μ	99	00.	Or	WM	04	00.	CI'	N	72	T.	Cy.	8	₹9	το"	TuesdayT		
	OF	WB	04	00*	Er.	W 8	22	00°	न्य	М	09	00*	เอ	8	89	00"	Er.	8	54	60"	CA.	WM	<b></b> \$9	00*	Monday		
	CJ.	Μ	89	00"	OI"	М	84	00°	GA.	M.S	99	00.	CI.	S	72	00"	CF	8	18	00,	-यम	MN	<b></b> ₽9	00.	Yebnu2		
	OF	м	99	00*	'TO	WS	84	00.	Gy.	W 8	89	00.	Hy.	S	82	00°	'TO	N	96	00.	CZ.	8	99	00*	Vabruta8		
	Or	_	89	00.	Gr.					M.S		00.		WE		00-	αr	EE		00.	· Kes	MN		00°	Friday		
			1																								
	OF.	W	89	00°	CI.	O W 87 00.		.VO	WB	₹9	00"	CJ.	8	89	00,	ar	as	08	00	.ya	WM	₽9	00.	Thursday			
	:	:	:	:	:	:	:	:		:	2	:	:	:	:	:	:	:	:	:		:	:	:			
	ind sin ind sin ind ind ind ind															:	her				Weather				IE22 . 2nA		
	Weather Wind Rain Weather Wind Weather Wind Weather Waind Weather												Weath	Wind	Temp	Rain.	Weather	Wind	Temp	Rain,	ont	Wind	Temp.	Rain.			
	M	TO T								T.	Rain	₩	<b>A</b>	H	NZ.	≱		E	8	₿	*	Ĕ	찚	DATE.			
Francisco, Los Angeles, San Diego													.031	пап	193.14	anc	η.	nic	r ne	27	• 10	TI TR	OLE	ı			
and the potential series and series and series													Portland,   Red Bluff.  Sacramento.  S.F.														
			[ 7	' '8 '	U ,8q	100	LAIGE	98 I.e	agië	tas	egres	3 ,MC	Farnished for publication in this paper by Melson Gorom														

### San Francisco Metal Market.

- 50 ds 85 (g -
- folasks, new 60 do
Naylor & Co 10 @ 14
Machinery 6 06 14 00 14 00 14
Flow Alow 6 Machinery 4.00 6
Black Diamond, ordinary sixes 84@
STEEL-English, B 16 25
Ohilled, do,
Buck, \$9 bag 2 00 @
Shot, discount 10% on 500 bag. Drop, \$ bag. 1 80 @ -
Sheet, discount 10% on 500 bag Drop, \$ bag. 1 86 6
Bar 5 25 @ 6 50
LEAD—Pig 5 00 @
- @ 00 gg 32 00 @ -
Olay Lane White 22 50 @ -
Oregon Pig, ton 21 00 @23 00
American Bort, No. 1, ton
Eginton, ton
. Гнои—Слепкатноск ton — @32 50
Fire Box Sheets 19 @ 21
Eire Box Sheets
Sheathing
Bolt 19 @ 21
-матчоо
Armagosa 5 @ 54
BORAX-San Bernardino 71@ 8
AUTIMONY—French Star 94 (20 -
THURSDAY, Sept. I, 1887.
WHOLESALE,

### Telegraphic advices dated gept. 1st give the following Wew York prices: New York Metal Market.

\$4.85@4.90. Antimony, \$8.55@8.75.
10.25; Foreign Lead, \$4.75@4.80; Foreign Spelter
Orford Copper, \$9.75@; P. S. C. Copper, \$10.00@
Banca Tin, \$28.55@24.00; Baltimore Copper, \$9.75@10.00;
tralian Tin, \$23.40@23.50; Billifon Tin, \$23.40@23 50;
buyers' and sellers' views. All prompt delivery. Aus-
in on call at the M. Y. Exchange, covering extremes of
Prices generally ruling for metals not regularly dealt
Trw-Steady at \$23.00@23.50. Transferable notices is- sued at \$23.05.
fices issued at \$4.65.
LEAD - Dull at \$4.65@4.70 spot. Transferable No.
ferable Motices (Chili Bars) issued at £40 2s.
ferable Motices (Lake) issued at \$10,70@ Trans-
COPPER-Strong, spot closing at \$10.60@10.75. Trans-
York Metal Exchange Market Report":
The following is the latest by mail from the " Mew
Опскепукв—63@64с.
LEAD-\$4.624@4.70.
Now-No. 1, \$21.00@22 00.
HORAX—54005c.
BAR SLIVER—96 c per oz.
TO TOU ORNO ONLY TAIL

### Complimentary Samples.

Persons receiving this apper marked are re-quested to examine its contents, terms o sub-guested to examine its contents, terms o sub-soription, and give it their own patronalsting the start as practicable, aid in circulating the journal, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription tate, \$5 a year. Extra copies mailed for 10 cate, if ordered soon enough, If already a subscriber, please show the paper to others.

Table of Lowest and Highest Sales in S. F. Stock Exchange.

ı	69.8	2.50	08.E	3.30	UP P	51.7	4 50	4 40	Seg. Belcher
ı	81	94.6	00.6	29	09.8	0912	24.	\$g	Savage
l	84.	24.3	00.0	-20	02.0	04.2			P. Sheridan Silver Star
ı		****		****			OT.		P. Sheridan
Ì	122		06*	92"	94°	04.	dr.		Peerless
l	32.E	1.10	T 30	1.20	aî.t		08.I	00.8	Potosi
ı	1.20	39,6	00.8	1.40	#9 -	00.5	96 9	60,1	Overman
ı	0g. I	28	94.L	UPL	32.8 np. r	08.T	70. C	48 88.1	Ophir
ı	29	1.50	47	<del>§</del> 9	3 32	3.10	00.6	.10.	Оссідентен
ı	02.2	0º	36.6		-6.6	91.0		* * * * *	Nev. Queen
ı	4.25	08.8	P*00	90'₽	2, 25	4.75	6,75	<b>8</b> g	Mev. Queen
ļ		20.4	**	20.11					WiagaraBItzaiM
ı	£8	03.7	86	是2 !	6.75		6,75	06.8	Navajo North Belle Isle
ı	1.30	1,20	1.55	T 32	1,50	1,30	01, I		Mayain American
l									Mt. Diablo
Į	00.₽	OTIF	00.£	2410	05.0	0F'F	00 5	00.4	Mexican
Į	00.4	2,10	00°T	37.8	00.1	92.1	00 Y	0E.Ł	опо М
ļ	04. L	or, i	nă r	1.30	62. 30. r	02.	07:1	67.	MATCH WILLIAM
ŀ	09"	čā.	09*	čč.	07.	09"	94	99.	KentuckLady Wash
ı			0F'Z	77		****	3,00	****	KentuckXoutaszi
ı	08"	09.	OL, I	07.	1,20	ôi.i	1.25	1,15	ulia
	09"	09			g9.		g9'	09	
۱	09"	***			37.		06"		- ome I
ļ					00.2		08.		Holmes
	G₽*₽	3,00	00"6	01.4	00.0	00.3		0I.4	
ľ		08.2	66.4	4.20	<del>2</del> 9	06.4		00.3	Gould & Curry
Į	04.4	00.0	20.1			99.1	70.7		Srize busz
ı	02 K	06	SF'T	87.8 81.1	99°I	39°I	39.I	1.25	wx.hequer
ı	00,8	32.7	00.7	67.9		****	00.7	87.9	на предвидения применти
ı	2111	73		****					
ı							00.	00"	CaptralOutle
ı	001	011		001	00.I	06"	00°T	06. 06.	770cker
	08.	dr.	62.6	00.7 86.	46 T	16 16	FOL	00,8	TOWN POINT
	37.7	89	02.0	00.2	02.	čí.	20	ăI.	Jon. Pacific
	38.	98.	gg.	0₹*	09"	gg.		77	Stedoms
	4		00.2		C7. 7.	****	2,40	97.2	onfidencelarredmi .no
	00.7	67.8	06.8	00.7	32.7	****	22. T	00*4	
	5.25	09.8	00.8	4.50	03.3	00.8	09.9	62.6	hollsrrellod(
	94°T	32,1	08,2	00.8	181 31,2	01,2	₹6 <b>1</b>	₽8I-	vilwer. Va. Vs. & Cai
	6£	TT.	₹2₹ 06	08.	OT T	06	1.15	48.	TO THE TANKE
	38	09	ŅĢ	Võ,	91.1	00.	31.1	40	Sodie Tunnell.
	9.50	01.2	2,95	02,3	06.2	01.3	00,2	06°T	Senton
	03.E	60.1	09"I	04.I	2,90 2,90	08.1	100 %		ao; j aibos
	09*	G₽.	06*	gg*	100 T	96*	1.20	31,1	
į	06°	37.	01.1	68.	I.25	91.1	2.00 1.30	08.1	aromitlas
	1.20	00.1	34.I	1,10				. 89 1 ×0	Sullion
ĺ	08. §8	06,8	22.9	02. 67.6	29 29	89	0£.7	35.	Best & Belcher
i	99	06.6	90.7	00.8		<del>g</del> q	87.7	38.0	Зејсрек
į	.45	00.6	30.7		92.4	89 88	.30	-0.0	Frence
	GT'T	08°	UT'T	00,I	35.1	gt't	SP'T	1,35	andes
ĺ	2,05	gg'T	2.25	06.1	02.2	2,10	2,20	01,3	
ĺ	8,00		00.₺	3.25	38. A		32.4		
ĺ							-		
ĺ									

# "De man wor knows it all is alluz a-makin" change, a-buyin' ob experience." The man who can find out a great deal about them in Grymskow's PUMP CATECHEM, By mail, postpaid, \$1. Dewey & Co., 220 Market St., S. F., Cal. 23. 0b. 09. 23. 37. 07. 08. 07. 23. 0b. 09. 23. 27. 2b. 01. 00. 09. 09. 00. 1 20. 100. 1 01.107.1 03.109.1 03.1 00. 1 00. 1 01.107.1 03.109.1 03.1 00. 1 00. 2 20. b 02. b 03. 3 88 03.3

INVentors, List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Ploneer Patent Solicitors for Pacific States.

From the official report of U. S. Patents in DRWHY & Co.'s Patent Office Library, 220 Market St., S. F.

FOR WEEK ENDING AUGUST 23, 1887.

368.708.—Сниви—М. V. Ensley, МсМіппчі]]е,

-TOY CATAPULT-P. D. Horton, Oak-

-PEN-WIPER-P. D. & G. Horton, Oak-

a, car. 168,60г.—Вяпрів—Е. МсЕчетs, Susanville, Cal. 168,663.—Ова Сомскиткаток—Ј. Н. Реmber-1, Los Angeles, Cal. 1, Los Angeles, Cal. 163,785,—Nur Lock—G. W. Roberts, Walla

Work.—Coples of U. S. and Foreign Patents turnlabed by Dwark & Co., in the shortest dires possible to the foreign patents. American and Foreign patents to the corter, American and Foreign patents for beautic Coast and general patent brainess for Feelin Coast inventions transacted with perfect security, at reasonable inventions transacted with perfect security. 868,627.—Stringe—T. Threlfall, S. F., Cal. 1868,793.—Sewer Gas Тrap—John Tilton, S. F., I.

### New Incorporations.

The following companies have been incorporal and papers filed in the office of the Superior Co Department 10, San Francisco:

Department 10, San Francisco:

The paper from the top of the school of the San Francisco:

\$250,000. Directors—C. W. Crocker, E. M. Black, P. Mareceano and John Barton.

EXCELSIOR BEVERACE PRESERVING CO., Aug. 30th. Object, to refine, clarify, purify and preserve and other liquors. Capital stock, \$50,000.

J. M. Somps and J. Barraqui.

J. Marrattora.

J. Marrattora.

J. Marrattora.

J. Marrattora.

J. Marrattora.

Solution of S. Di.

J. Marrattora.—Charge.

Solution of S. Di.

Solution of S. Di.

J. Marrattora.—Charge.

Solution of S. Di.

Solution of S. Di.

J. Marrattora.—Charge.

Solution of S. Di.

Solution of S. D

PACIFIC: PAVING CO., Aug. "31st. Object, to conduct a general paving business, bore wells for conduct a general paving business, bore wells for Jews and J. T. Wilson.

Jes. H. Swift, J. Rice, J. L. Thurber, F. N. Gowyol, Directors—James H. Swift, J. Rice, J. L. Thurber, F. N. Wilson.

37st. Capital stock \$50,000. Directors—James H. Swift, J. Rice, J. L. Thurber, F. N. Wewval and J. T. Wilson.

ALVA UDELL Co., Aug. 31st. Object, to construct for transportation by rail or atsemer and deal in real estate. Capital stock \$700.000. Directors—I, T. Rogers, Alva Udell, John Anderson, Bernard Ettinger and J. S. Jones.

### Mining Share Market.

There is not much to say concerning mining stocks. Prices are low and the transactions are textual stocks are there is comparatively little interest in stocks by the stock of the subject the Virginia Lawropysts just now. On this subject the Virginia Lawropysts pageks as follows: In view of the real estate boom now in progress in all parts of thousands of dollars and the renamed of the real estate boom to ports of tens and hundreds of thousands of dollars under in every hillsge and hamiet 'ijust as easy as rolling off a log," it is useless to tell the people that notice in every village, and hamiet 'ijust as easy as rolling off a log," it is useless to tell the people that rolling off a log," it is useless to tell the people that notices from end to end of the location of event. The Comstock is far away across the mountered at almost any we bere in the nountered at stimost state and boom is infasted, while all over Galifornis the land boom is infasted. While all over Galifornis the land boom is infasted, while all over Galifornis the sort over the mountered are mills, and such mills as have never before been airs in a month or two will speak for itself. We already have the ore, and we will very soon have the one in the country.

Seen in the country.

### Sales at San Francisco Stock Exchange.

Yellow Jacket 3.95	100	1040 Gould & Curry 3.90@1
Utah 1.10	100	di.f
Union Con 2.65	944	300 Стоскет80с
ocunsiort	00₽	200 Challengs 2,00
Scorpion noiquos8	99	10 Con. ImperialI.60
UI.E KbaveM arreig	082	77
Savage	OTEL	25 Crown Point, 74
Peerless1.25	300	MISO Con Va & Col INE @174
Potosi4 40	OOL	160 Ohollar TallodO 061
Peer	101	200 Bodie 3.25
Occidental	09	550 Belle Isle5.00
Overmanl.10		150 Bulwer 85(090c)
£6@\$9 ridqO	092	50 Baltimore85c
Иет. Queen4.05	002	875 Belcher4.9u@5
Mexican	T00	75 Bullion1.00@1.05
Justice	100	225 B. & Belcher5@54
Julia45c	UG.	100 Andes
LOWA	900	30. L 83LA 008
08.E To M 3 elaH	00₺	THURSDAY Sept. I, 1887.

FRIENDS can do much in ad our paper and the of proceeding the woods from the control and the c

### The New Railway Fares.

We mentioned last week the reduction in passenger tares over the lines of the Southern Pacific System. The following is a fuller state-

Pacific System. The following is a futier state-ment of changes to take place soon:

The rates from San Francisco to Geden will
be \$35 unlimited, \$30 limited and \$25 third-class. From San Francisco to El Haso the
rates will be \$40 unlimited, \$35 limited and \$25
third-class. From San Francisco to Tucson the
frate-class. In Arizons the reduction will be
generally from \$4 to 5 cents a mile.

Following is a list of the principal reductions
determined upon.

Following is a list of the principal reductions
determined upon.

From Packett

From San Francisco

F

| Detween | Detw Trucicee

Reno
Los Angeles and—
Santa Paula.
Santa Paula.
Santa Paula.
Santa Paula.
Santa Barbara.
Marnyaville.
Fresno
Lathrop.
San Francisco.
San Francisco.
Lathrop.
Lathrop.
San Francisco.
Coles.
Coles.
Reno.
Coles.
Reno. | Detween | Detw Truckee..... Reno..... Between Templeton

Lathrope

Lathrope

Lathrope

Metrod

Metrod

Santa Barbata

Sumnet

Santa Barbata

Sumnet

Colion

Mapa

Sumnet

Sumnet

Colion

Mapa

Sumnet

Sum

### Bullion Shipments.

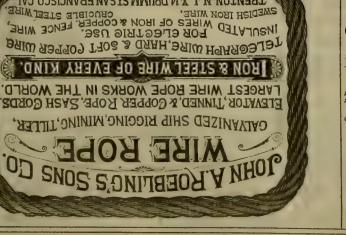
We quote shipments since our last, and shall be pleased to receive further reports:

Eureka Con, Aug. szy, \$16,000; Bluebird, Aug. sc, \$15,000; Alleepird, Szy, \$10,000; Allee, sc, \$15,000; \$17,87z; Moulton, sc, \$14,000; Alleepird, \$2, \$25; Mingo, szy, \$27z; Paradise Valley, sc, \$300; Con, Callfornia and Virginia, sc, \$86,265; Germania, sc, \$3869; Mingo, \$2, \$25,000; Con, \$2, \$2, \$200.

### Don't Fail to Write,

South Comstock Consolidated Silver Min-

ASSESSMENT NOTICE.



M' S' KEILH'

Keith's Electric Dynamos

MOTORS, LAMPS

SOLUGIUS HALLOLICS

Electric Reliways, and Appararus for the Electric Transmission of Power,

received the state of all sizes for Conveying Power of performence, of performance, of performance.

Office, 40 Nevede Block, Office, 64 Nevede Block, 18 Sevenson St.

11 Stevenson St.

No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

Blasting Powders.

Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager. FOR HEMOVING STUMPS AND TREES.

S'.00 DEMEK

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old perionced, first-class Agency. We have able and trustworthy Associates and Agency in Wash-fon and the capital cities of the principal nations of the world. In connection with our edities and the capital cities of the principal nations of the world. In connection with our edities and advantages for beyond those which can be offered home inventors by other agencies. The exmantion accumulated through long and careful practice before the Office, and the frequent ministion of Patents already granted, for the purpose of determining the patentability of emistions of national and an arresponding the patentability of emisting the patentability of some of applying for Patents enables us often to give advice which will save inventors the sone of applying for Patents upon inventions which are not new. Circulars of advice sent is on receipt of postage. Address DEWEY & CO., Patent Agents, 252 Market St., S. F. A., DEWEY.

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

EDISON INCANDESCENT LIGHT, For Mines, Hoisting Works, Mills, Reduction Works,

Incandescent & Arc Electric Lights.

ELECTRIC DEVELOPMENT COMPANY.

TRENTON, N.J. & 14 DRUMM STSAN FRANCISCO, CAL

RON & STEEL WIRE OF EVERY KIND.

CALYANIZED SHIP RIGGING, MINING, TILLER,

ROEBLING'S SONS CO

Practical Treatise on Hydraulic Mining.

**ROILER.** 

CONTRACTORS, ATTENTION!

and afford a means of working the and object. Estimates and design

DIDS ARE INVITED TO CONTINUE A TUNNEL MARCHURS Machinery on the ground and now in operation. For further partieu-

188 Oslifornia St., San Francisco. WALTER O. CHILDS, Calaveras Co., Cal., or of

Engraving superior wood and Model Engrav-ing, Electrotyping and Scoteobyping and Scoteobyp

A NEW AND RADICAL DEPARTURE IN

OTHER STYLE OF BOILER. OF AT LEAST 25 PER CENT GUARANTEED OVER ANY

**NOTJEZA** 

**WACHINERY** MINING

FIRTH, 18 and 20 Fremont St., San Francisco. MACHINERY. COMPRESSED and WATER POWER

DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

EOH



A SAVING IN FUEL

San Francisco, Cal.

NATIONAL ROCK DRILL.

WINERS, HORSE WHIM

CIRCULARS.

GENERATOR.

All verought from. No gears, no breakage, 200 sold on this Coast, Has Draise, complete, \$200. is gold on this Coast.

Price, complete, \$200. is gold on this Coast.

Price, complete, \$200.

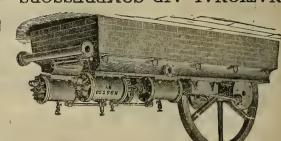


KNIGHT'S WATER

PACIFIC IRON WORKS

**STEAM** 

Over 300 in nse. All estimates ... anteed. Send for Circular. All estimates guar-MILLS, PUMPING AND HOISTING.



NATIONAL AIR COMPRESSORS.

SINGLE OR DUPLEY, STEAM OR BELT POWER. 62 Soid on the Pacific Cosst.

### Iron and Machine Works.

CALIFORNIA MACHINE WORKS,

WM H. BIRCH & CO.,

ENGINEERS AND MACHINISTS,

WAS H. BIRCH & CO.,

Steam Engines, Flour Mill, and Machines Machines

Brodie Rock Crushers, Steam Power, Hydraulic, Side Walk and Hand-Power

ELEVATORS.
Manufacturers of B. E. Henrichen's Patent Automatic safety Catches for Elevators. All linds of machinory nade and repaired.

All opposited.

All opposited.

UNION IRON WORKS,

BOOT, NEILSON & OO., SACRAMENTO, CAL,

Steam Engines, Boilers,

Front St., bet. M & O Sts., Touring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired, MACHINERY FOR MINING PURPOSES.

Golden State & Miners Iron Works.

Marufacture from Castings and Machinery of all Kinds at Greatly Reduced Rates.

Mold-Board AMALGAMATORS, STEVENSON'S PATENT

Golden State Pressure Blowers.

Wret St., between Howard & Folsom, Ets

EUREKA FOUNDRY тномрьом вкотнеяв,

MANUPACTURERS OF CASTINGS OF STRRY DESCRIPTION.

WALLIFATHS & OFFORM.
MANUE'RS OF GENERAL MACHINERY.
Worles, No. 315 Mission St., 28n Francisco.
Special Afrendion given to Woodworking Machinery.
Steam and Gas Engines. Correspondence solicited.

MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

MINING EXLERT AND GEOLOGIST.

BOZZ E BEOMNE'

Mining and Hydraulic Engineer,

### The Techno-Chemical Receipt Book

NOW READY.

THE TECHNO-CHRISOLAL ESCRIPT HOOK.—Conforming Several Thousand Secsiples, covering the Latest, and Indian Several Thousand Secsiples, covering the Latest, and Thousand Secsiples, covering the Common of Arts and Indian Several Thousand Secsiples, covering the Common of The Whilliam T. Additionally the Conformation of The Whilliam H. Wahl, Th. D. (Held.) Princely of metabase of the Parallel meta

Industrial Publishers, Booksellers, and Importers, U. S. V. Billsdelphis, Ps., U. S. A. HENEL CARET BAIRD & CO.



Broz Fires of the Minne and Sonnapped Press (un-bound) sen be had for \$3 per volume of six months. Per year (two volumes) \$6. Inserted in Dewey's patent bind, et, 60 cents additional per volume. Zinc, Copper or Brass Screens for all purposes. Cali-cornia Perforating Screen Co., 145 & 147 Beale St., S. F.

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Obstreres of Vessels for all Trades. Agents for Growers and Manufacturers. Obstreres of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Froducts.

Have correspondents in all the chief cities of the United States, Europe, Australia, India, China and the principal latends of the Pecific. Furches goods and sell fabilitonia products in those countries.

General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTOW INSURANCE CO., of Boston, Massa

H. T. Scort, Vice-Pres and Treas.

GRO. W. DICKIN, Manager.

Location of Works, Potrero. P. O. Box 2128. Office, 216 Market St., S. F.

Agents of the Cameron Steam Pump. STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

PANS, SETTLERS, RETORTS, ETC., ETC. BABY HOISTS, VEUT-FEEDERS, SELF-FEEDERS, PULLEYS, Vertical Engines, Horizontal Engines, Automotup Coudensine Engines, Sharting, SHAFTING, STAMPS

TRY OUR MAKE, CHEAPEST AND BEST IN USE,

**NUION IBON MOBKS** 

GEO. W. PRESCOTT, President.

OBKS

Cartaine in 1865. San Francisco. HINOKUEY, SPIERS & HAYES, Proprietors.

-NAMBARTURANA OF-

MINING MACHINERY.—Hoisting Engines and Propeller Engines, either Hi Stern or Side-wheel Engines. MARINE ENGINES AND BOILERS.
ropeller Engines, either High Pressure or Compoun-

Works, Cages, Ore Buckets, Ore Care, Pumping Engine and Pumps, Water Buckets, Fump Columns, Air Com pressors, Air Receivers, Air Pipes,

Crushing, Amalgamating Pans, Sottl rs, Furnaces, Fer-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc. MILL MACHINERY.—Batteries for Dry or Wet

Mill Machinery, Saw Mill Engines and Boilers, Drecla. Machinery, Powder Mill Machinery, Water Wheels. MISCELLANEOUS MACHINERY.-Flou

Tustin's Pulverizer

MORKS ORE WET OR DRY.



OF ALL KINDS, ENGINESBOILERS

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries of by by the Tanks of by the Public Tanks of the Public Tanks

OF EVENT PESCHIPTION. Soliet Repairs Promptly attended to and at very moderate rabes.

Deane Steam Fump.

SPECIALTIES:

Corlies Engines and Tustin Ore Pulverizors.

DEAUE STEAM PUMP.
Agents and Manufacturers of the Liewellyn Feed Water Furtiler and Heater.

PACIFIC ROLLING MILL CO.

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Cast or  $\overline{\mathbf{W}}$ rought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

HIGHEST PRICE PAID FOR SCRAP IRON AND STRELL, ALSO Steel Rods, from \$ to 3 inch diameter and Flats from I to 8 inch. Angles, Tees, Channels and other sheep we want when the first prom I to 8 inch. Angles, Tees, Channels and Leave to see the state of the state

AT Orders will have prompt attention. Send for Carmogues. Author Co., 202 Market St., San Francisco.

WINING WEN' NOTICE TO

ENGINEERS, CONTRACTORS,

and others interested in

TUNNELING, SHAFT-SINKING, ETC.

Engineers' Tables of Progress

WITH MAPS, ILLUSTRATIOUS

AND FULL DESCRIPTION OF THE

NEM LOBK

Section 16x16 feet; Length 36 miles.

THIRD EDITION NOW READY.

SEUT FREE ON APPLICATION

For Catalogues, Estimates, Etc. address:

INCEBSOFF BOCK DBIFF CO'

REPRESENTED BY

PARKE & LACY,

SAN FRANCISCO, CAL, 8 California St., and 21 Fremont St.

GREAT REDUCTION!

BATTERY SCREENS.



PERFORATED SHEET METAL

For Flour and Rice Mills, Grain Separators, Revolving and Soft Servers, Stamp Batteries and all the Soft of Servers, Stamp Batteries and all these of Machinery, Aron, Steel, Copper, Brass, Income delem malsis burnohed view all uses Inventer and Manufacturer of the celebrated Stoc Cut Inventer and Stor Funched Serves.

Mining Soreens a specialty, from Me. 1 to 15 (fine), Mining Soreens a specialty, from Me. 1 to 15 (fine).

San Francisco Pioneer Screen Works,

221 & 223 First St., San Francisco, Cal JOHN W. QUICK, Proprietor.

Mining Vats and Tanks





PRECIPITATING VATS, LEACHING VATS with FALSE BOTTOMS

SOLUTION and WATER TANKS

For Mining Purposes.

MELLS, RUSSELL & CO.,

San Francisco Mechanics Mills

MINCHEZIER HONZE

44 Third Street, San Francisco, Cal., This Five-proof Brick Building is centrally located, in the mealthless part of the city, only a bath block from the Grand and Palace Hotels, and close to all Steamboat and Ealiread Offices.

Landty Free for the use of Families HOT AND COLD BATHS FREE.

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

DR, PIERCIE'S New Galwante Chain heter before the
most powerful, drush eine bede the
positive period of the property of the form
tien, Penin in the Back, Kidney Dieses,
tien, Papeppels, Weshrose of the Sorntien, Papeppels, Weshrose of the Sorntie VANIC CHAIN BELL LILE BENEMER

SAN FRANCISCO, CAL,

BALT LAKE OITY, UTAH.



PORTLAND, OREGON.

ENGINES and Steam Pumps, Machinery Mining Machinery, Wood and Iron

made of rest soft lake superior copper

VOTIOE.—All our places are graenfieded to have the tested bethe full weight of silver agreed upon, and are tested betore leaving our works, thereby avoiding the complaints
and the property of the proper

JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material. 521 & 523 Market St., San Francisco,

HYDRO-CARBON ASSAY FURNACES Agent for HOSKINS' BATTERY SCREENS AND WIRE CLOTH HUNTINGTON,

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

AND ORE CRUSHERS, CONCENTRATORS

Mining Machinery of Every Description,

secom Engines and Shingle Machines.

SEND FOR CIRCULAR.

No. 45 FREMONT STREET, .-SAN FRANCISCO, CAL.

MASSEY'S STEAM HEANMERS.
ERS.
ERS.

BEVDIEK COSHIONED HVWWEES LOUBINE MATER WHEELS.

BRYINVED MITTING MYCHINES

SHIMER MATCHER HEADS.

EXHAUSTS, BLOWERS

EERIN BYND SYM BLADES.

WEBBER CENTRIFUGAL PUMPS.

TOOLS, SON'S MACHINISTS

CHINISTS, TOOLS. CHINISTS, TOOLS. илсниену. Видик & СС', в Woodworking

MACHINERY, ' A. Pay & Co.'s Woodworking

BLAKE'S IMPROVED STEA

SICKLORD, S LOWER DRILLS.

Cor, Fremont and Mission Sts., Pres | San Francisco, Cal.



SOLE AGENTS FOR

ERCINES' BEOS, HOISLING

OLLO SITENL GVS ENGINES' SOUTAL ENGINES. VALVE ENGINE WORKS ENGINES

JUDSON ENGINE GOVERNORS, EMPIRE LAUMDRY MACHINERY,

NATHAN AND DREYFUS OILERS. AND MACHINERY, WHEELS PICKERING ENGINE GOVERNORS

ING CO'S KUBBER GOODS.

NEW YORK BELTING AND PACK. DISSTON'S CIRCULAR SAWS. Loes, torectors and elec-

H. W. JOHNS' ASBESTOS PACK-TYNE VND BODIEK SYM WILLS.

AVCHL ENGINES

### and ENCINES

FROM 2 TO 100 H. P., ALWAYS IN STOCK

MILL SUPPLIES AND LUBRICATING OILS.

HOOKER & LAWRENCE, Gen'l Agents.

Office, 145 Broadway, cor. Liberty St., NEM LOKE

ness in a rapid and economical manner.

other Mineral Substance to any degree of fine-

Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

-FOR WET OR DEY-

CENTRIFUGAL ROLLER

EKIZBEE-LUCOP

IN QUARTZ, GRAVEL, OR PLACER MINES.

Any method of smalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh

All wearing parts easily and obeaply replaced. May be seen in operation at the New York

Metallurgical Works, 104 and 106 Weshington St., and Pacific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, furnished on application.

THE FRISBEE-LUCOP MILL CO.,

(\$2\\\2000) E' O' B' FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE MOW IN USE. Concentrations are clean from the first working. The west and are make tests at 220 Fromont are merely nominal. A machine can be seen in working order and ready to make tests at 220 Fromont

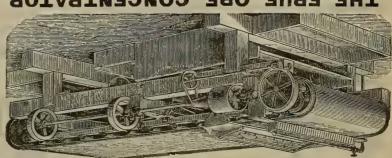
THE MOUTANA COMPANY (Limited).

N. B.—Since the above was written the 20 Vanners baving been started gave such satisfaction that 44 additional Frues and more stamps have been purchased.

ADAMS & CARTER. The Mowrang Charles of Your Frue Vanners in a competitive trial with other 8, 1885. (Inmited), Lowdon, October 8, 1885. (Inmited), Lowdon, October 8, 1885. (Inmited), we have eatisfied outselves of the superiority of your Vanners, as is evidenced by the fact of our having red twenty more of your machines for immediate delivery. Yours fruly,

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; Febru-ary 20, 1885; September 18, 1885. Patents applied for.

SAN FRANCISCO, CAL Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OR VANNING MACHINE, THE FRUE CONCENTRATOR

# JOSHUA HENDY MACHINE WORKS.

San Francisco, Oal. Nos. 39 to 51 Fremont Street,

OE EAEKA NEW and Dealers in SECOND-HAND BOILERS, ENGINES and MACHINERY

Stationary, Portable, and Hoisting

**ENCINE2 Sud BOILERS**:

, Shafting,

Pulleys,

goxes,

**MOOD MOBKING** SPECIAL AUTOMATIC ENGINES. [Manufactured by the Cummer Engine Co., of Cleveland, Ohio.]

OIF2 LUBRICATING COMPOUNDS

BEPLING'

LEATHER and RUBBER

BLOWERS AND EXHAUST FANS.

WINING PUMPS.

CENTRIFUGAL PUMPS, Steam Pumps of all Makes,

OF THE BEST MAKES.

PIPE and PIPE FITTINGS.

Brass Goods

FITTINGS.

Ore Feeders. Concentrators, Automatic draulic Giants, "Triumph" Ore chinery, Hydraulic Gravel Elevators, Hy-Hydraulic Mining, Quartz, and Saw-Mill Ma-

L. R. MEAD, Secretary.

SHINGI'E MILLS, Etc.

MACHINERY,

Hangers,

R. S. MOORE, Superintendent.

WM. H. TAYLOR, President.

Upright Engines and Boilers Connected.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

Borgs & Clarke" Centrifugal Pumps.
The Volker & Felthousen M'f'g Co.'s
Buffalo Duplez Steam Fumps.
P. Blalsdell & Co.'s Machinists' Tools.

"Oummer" Engines, from Oleveland, Ohlo,
Porter Manurlacturing Co.'s Engines and Bollers.
"Baker" Rotery Pressure Blowers.
"Baker" "Wilbraham" Rotery Pleton Pumps

AGENTS FOR THE SALE OF

Single and Double Circular Saw-Mills.

PLANERS, SHAPERS,

BAND SAWS, STICKERS,

SAFETY,

AND FACILITY OF INSPECTION and REPAIRS. ECONOMA

Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Jute Mills, and other places. . ези пі won темоТ езгоН 000,00

Guaranteed More Efficient than any other Boiler made.

OE

BUILDERS

WATER TUBE

Manufacturers and Sole Agents for the Pacific Coast for

**BOILER**,

OUARTZ MILLS—Gold and Silver, Copper and Lead Smetting Works, Roasting Furnaces M all lidnes.

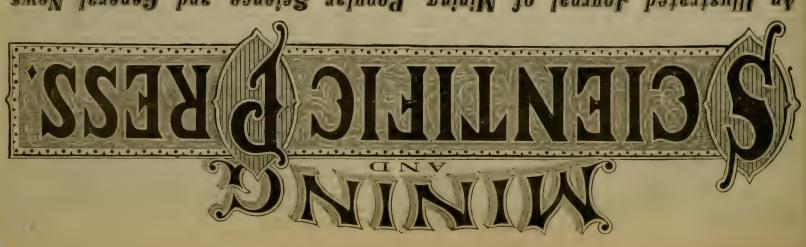
AIR COMPRESSORE—House Power Therappears as Specialty. Morr.—Have just completed order for 35 miles of 44-inch part of 85 parts PIPE RIPE a Specialty. Morr.—Have just completed order for 35 miles of 44-inch part of 85 parts PIPER RIPE a Specialty. Morr.—Have just completed order for 35 miles of 44-inch parts of 85 parts PIPER PIPE a Specialty. Morr.—Have just completed order for 35 miles of 44-inch parts of 85 parts PIPER PIPE A Special Morr of 85 parts PIPER PIPE A Special Morr of 85 parts PIPER PIPE A Special PIPER P

REFRIGERATING MACHINERY for Steamships, Brewerles, and Cellars.

AT Builders of 120-stamp Gold Mill for the Alaska Mill and Mining Company; 60-stamp Mill for Quartz Mounta-Mining Company. Send for Circular and Price Lists. WILSON'S PATENT GAS-PRODUCER.
STEAM HOLLERS of all descriptions.
SUGAR MACHINERY—Sugar Mills, Wannus Par
Pumps, Steam Opplesna, Gargo Windles, etc.
Pumps, Steam Opplesna, Gargo Windles, etc.
Pumps, Steam Opplesna, Gargo Windles, etc.

RFEILIGER OF LIGHTERY—SUGAR MILLOR DE ALBERG MILL

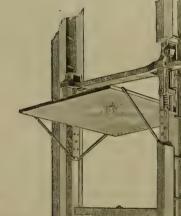
REFERINGER OF LIGHTERY CASH MILLOR DE ALBERG MILLOR DE ALBERGE MILLOR DE ALBERG MILLOR DE ALBE



Illustrated Journal of Mining, Popular Selence General News. pug

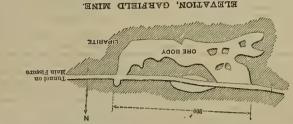
SAN FRANCISCO, SATURDAY, SEPTEMBER 10, 1887.

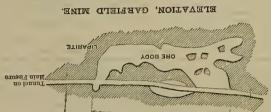
In last week's Perses we gave a map of Calico mining district, San Bernardino county, taken from a paper by Waldemar Lendgren of the U. S. Geological Survey. This week we continue the subject by a further description of the Gar-ABURER I. HALL and Jacob B. Bangham have Coal and Quartz Sandwiches,—Among brought suit in Sacramento for \$2200 damages the Franckon coal used on the railroad, says against George Cushman, Fred. Cox and M. D. I the Auburn Republican, some pieces were found



ALBERT'S AUTOMATIC SAFETY ELEVATOR.

POMEE MOEKS, NEW ALMADEN QUICKSILVER MINE.





Diggings, and olaim that the damage was done contain etteaks of beautiful whi by the injunction secured pending a debris suit. | specimens stervely handsome. Eideout. The plaintiffs own mines near Indian on an engine at the station the other day which Diggings, and claim that the damage was done

MEVADA COUNTY has a fine collection of ores

by the sudden arrest of the cage or car is wholly obvisted and relieved. This device is quite simple and appears to be effective.

head or der by which the reversible catches, the fixed stops and the balanced stops are car-ried, and by means of which the jar occasioned

thrown to position to stop the cage, and other details of construction. A special feature is the sliding spring-controlled or cushioned cross-

the fixed stops for holding the eatches when

sion of the catches when operating normally, pivoted balanced-stops for checking the vibratain, and the speed of the cage regulated, the weights with the catches, whereby the proper operation is rendered more effective and cer-

sa the adjustable connection of the balance

catches there are several other features, such over and the cage is arrested. In connection with the balanced awinging

car for any reason goes too fast the stops turn nor on the machinery, pins, holts, joints, dogs or cams, but simply on itself, and when the

pliance does not depend on the hoisting rope,

It will be observed that the safety apparatus is beneath the elevator cage. The safety ap-

has been turned over and is supporting the cage, while the larger engraving (Fig. 1) shows the catch operating normally.

engraving (Fig. 2) shows the catch after it There is no jar in stopping, for the stop bars are carried by a sliding frame, which cushions on the springs shown in the cut. The smaller

are suspended by Jointed hangers, and in turn-ing they fall over on the inner ends of the stop pars and hold them.

These eatches cannot rebound for the weights

versed ends rest on the fixed stops and on one of the rack bars whereby the cage is stopped. back or revolved half a turn until their retoo high speed is attained, the catches, by forcible contact with the rack bars are thrown But in descending, when for any reason a rapid rate of speed, the ends of the catches slip by the rack bars and present no obstruc-When the cage is according or descending at

pivoted weights, forming part of the eatches, serve to return the catches to a horizontal posi-

vertical plane of the rack bars, so that they catches. They consist of stout bars pivoted on side timbers of the frame of the cage. Their outer ends project between the guides and into the

out striking the pine or bare. Under the eatety

diw awob bas qu sebile eges edt tedt rennem as shown in Fig. 1 of the cuts, but in such a tween which are placed at regular intervals stout bars or pins. The vertical side portions of the elevator frame fits between these guides

on this page. In the elevator well or shaft on each side are guides formed of double nprights be-

an automatic safety elevator which is on an en-tirely different plan from any heretofore con-structed. Engravings of the device are shown

MINING AND SCIENTIFIC PRESS Patent Agency Henry Albert of Crescent City, Del Norte connty, in this State, has patented through the

Albert's Automatic Salety Elevator.

.maindiliaps as ot arater acitardiv come into contact successively with said bare, but being pivoted they slip by them and by Home

tion after they pass each bar,

on exhibition at the Mechanics' Fair in this

sefture of Mining Engineers. The mine has been been worked for many years and has been very productive, still keeping the lead as the foremost producer in the United States, papers on the subject before the American Inthe mercury. These works have been described in close detail by Prot. S. B. Christy of the University of California, who has read the general manager, has a thoroughly per-fected system for handling the ore and saving most extensive. The engraving gives only a general idea of the works. Mr. Randol, the this continent, and its reduction works are the

### Mew Almaden Reduction Works.

aniphides. That this is, nevertheless, the case, is proved by a specimen from the Comet mine, at present in the State Mineralogical Museum.

appearance that it seems difficult to consider the ores as formed by decomposition of primary

minerals have in places impregnated the rock, coloring the feldspare greenish. The whole often presents and a tresh and undecomposed

the latter filling the interstices between the orystals. Younger than both are the haloid salts of silver, forming coat on the chrysten in it. The coppen or amall vein-like streaks in it. The coppen

fissures the barite is evidently the oldest. It has often well-developed crystal faces, and usually determines the form of the chryscoolla,

feet and more. (See engravings.)

Of the minerals deposited in the oracks and 104 ot gainsbiw niege agains diening to 40

bodies are extremely irregular, sometimes nar-

to a south side of it. The whole forms what the south side of it. The whole forms what might be called a stockwerk, or a zone of numberless in the liparite, ovidently caused by the same dislocating force which formed the fault. Silver over mainly ocur on these oracke, and the whole often appears as a brecois of liparite camented by the gangue and argentiserous minerals. The ore gangue and argentiserous minerals. The ore

reached the canyon level. Some ore is found

which is opened by adits from the canyon side, is 200 feet, but the explorations have not yet

sarily striotly following, distinct fault planes,

ured and ornshed zones of rook, naually cement-ing the fragments. These zones are, in the cases observed, connected with, but not neces-

rarely as malachite. The ore occurs in fractthat mines of this group carry much more copper per than those already described, the copper neaelly being in the form of chryscoolls, more

brown ilparite. In this liparite occurs a second brown ilparite. In this liparite occurs a second of occurs a second occurs as a second occurs as a second occurs as a second occurs. As a second occurs, Thunderer, Boss, Cobler, Albambra and Comet. The principal difference is break and Comet.

field group of mines in the same district,

The divide between Bismark and Carfield
canyon is mainly built up of a massive, violet-

Calico Mining District.

Mumber 11.

On this page we give an engraving from a photograph of the reduction works at the New Almaden quicksilver mine, Santa Clara county, for which we are indebted to the New Almaden is the Israel and the New Almaden is the Israel and most important quicksilver mine on Israel and its paradraphyer mine on the second succession.

HORIZONTAL PROJECTION, UPPER LEVEL GARFIELD MINE.

### Origin of Metallurgy.

Interest of the Press from the French by M. M. M. W. Quiquester to the Brided three binds of furnashed three binds of furnases, or rather three degrees of improvement in their arrangement. The georal form the generality. The second form the generality. The second form the generality. The nodels which he thinks belong to the first bind bast comprise but a small number of exceptional last comprise but a small number of exceptional models which he thinks belong the first bind models which he for the first bind models which he for the first bind side in the side and the first bind first bind first bind first bind first be side and first belong the first bind first be side and first but changing the form the first bind first bind

respond to the control of the contro worked among the greekest number of the Airic san tribes which he visited. According to him, of the eastern coast of Airics make in the soil a cubic cavity with the sides of 15 centimeters, which they surmoute with a conical chimney in which they surmoute with a conical chimney in terra cotts, of which the base has two orlices placed at right angles. One of these openings is kept closed during the works, the other receives the wind of the two bellows which a cases placed at right angles. One of these opening and man moves alternately, while his companion cases by pinches charcoal and ore in the further accover the opening and without the further hard. According to Cheeke, they give a coup de feet, then pulverized ore, they give a coup de feet, then they uncover the opening and without a companion of the farther they uncover the opening and without a feet of the farther they uncover the opening and without a feet of the farther they mover the farth of the farther they are of the farther they are of the farther and the farther apper Nile, and of which the high the companion of each of the farther they are organized in the lower part permit, the one, the farther of the farthe

perfect bird. I admit that his hilling of three swallows on the 3d day of June, 1887, as reconded by Dr. Gally, was entirely wrong, but I cannot see why be should be denounced as a robber and sneaking pirate for the performance of that feat As wild deer and antelope have no of that feat. As wild deer and antelope have no of that feat have no or the other hand, is a robber, the hughwayman, on the other hand, is a robber, but who owned the three swallows? Nobody. But who owned the troperty. Thus, the wild the bird that he defense he may declare that in a security have a proprietary in the whole community have a government, the secopt of the stand the while he breeds enakes, toads, lizards, they proceed the hole of this 'mate, work of these swallows was to fill in and similar pests, the he seems proud of his 'mate, not he breeds enakes, toads, lizards, trogs and clouds a there to feast upon them. The seems proud of his 'mate, or the the seems proud to doubt mosquitoes and similar pests, which skimmed over his bay. I cally in breeding millions of his conditing to doubt mosquitoes and similar pests, which skimmed over his bay. I have a service to man.

In respect to the three swallows whose unsured the surface of the street in the service to man.

In respect to the three swallows whose unsurface to man.

necessarily preyed to be aire stock in that help though and the proper line of a merce and a seless in their proper line of a service to man.

In respect to the three swallows whose unito such a feverish whirl, I claim that by logical selection of the service to man.

In respect to the three swallows whose unito such a feverish whirl, I claim that by logical sequence he ought to be regarded as their slayer tempted the swallows to come to a banquet he bad prepared for them; kept his domesticated of the ground, they were dexterously transferouse in the managed his frait force of the ground, they were dexterously transferouse to the house for his ride and any the feet for your pages, and, no close of that calaminous helf, but the said own transfer did your correspondent do at the feel of the second to the house for his ride and any the second to doubt, found the effort a sort of sedative, particularly as he probably made his conscience because to the house for his against the said on the feet bai letter for your pages, and, no doubt, found the effort a sort of sedative, particularly as he probably made his conscience because, to the house for his against the said the his meaning the conscience because of the most of the said on the feet and more intimately acquainted which first fellow-citizens who seem to be the one more intimately acquainted with Diety veeral more intimately acquainted with Diety being his ontrop of his much fellow-citizens who seem to be one enemy to one every possible conscience because and arbitrary practice of intruding him that he slightest hope of peing able to convince him that he slightest hope of peing able to convince him that he slightest hope seems to one every possible to an arbitrary made him that he slightest hope to be more him march the slightest hope and him that he slightest him that he slightest him that he slightest him that he slightest him

The Pelton water wheels now in place in the tested and found to work well shad smoothly.

The model of the gear for the transmission of the model of the gear for the transmission of its bower obtained by the use of these wheels is to be seen in the office at the Con. California and Virginis shaft, and all work wheel is instantly communicated to all, and all work with astenishing lightness and smoothness. Just a seconshing lightness and smoothness, Just as an it is with the working to the shaft. The steel wire cables anotherstrain the shaft. The steel wire cables turning over the pulleys on the towers at the to the pan-mill, hall a mile distant, with equal catainty over the pulleys on the towers at the cortainty and smoothness. It would be a most to the pan-mill, hall a mile distant, with equal catainty and pleasing sight, whou all is in marvelous and pleasing sight, when all is in ing vertically to a high to I 1500 feet, then by a pensation, confid one at one of the catainty sand cables in the shaft, working well one as a noison of a horizontal distance of 1500 feet, then by a willtness to a horizontal distance of 1500 feet.

Virginia Enderpriss.

given to Delegate Shannon, who, a few days a feet, left for San Francisco. On the 2d day of September, 1849, the steamship Fanama, Capt. September, 1849, the steamship Fanama, and in. September, 1849, the steamship Fanama and in. September, 1849, the steamship Fanama and in. The writer, vertion, Shannon among the rest. The writer, vertion, Shannon among the rest. The writer, vertion, Shannon among the rest. The writer, whill map being the outcomerstone of this Sutter Mill map being the outcomerstone of this Sutter Mill map being producted by Shannon and above to the state of the same the convention of the same to the state of the convertion of the same of the same of the convertion. In this species of the convention. In this vertical, the state of the convention. In this vertical being the outcomers of the convention. In this vertical being the convention. In this vertical being the convention. In this vertical being the outcomers of the convention.

As now constituted, this State presents a should, even in the anywell be that gested themselves to the minds of other members of the convention.

As now constituted, this State presents a should, even in the same street incentive of the supportioned territory, being the disponse strikes and this greet irregularity of the onearty calliform width throughout its entire the about the onearty uniform width throughout its entire the about the onearty uniform width the presence of the minds of other members of the convention.

As now constituted, this State presents a should be therefore the price as it is the integrity of the desponse ing. ''In nowing seeds of the one of the minds of which therefore the present of every Californian. As the Jone with the the office of the minds of the onearty calliform of the present of the convention and the call of the one of the minds of the one of the minds of the one of t

Defending the Road-Runner,

Santa Cruz county, be nullified. It gave me EDITORS PRESS:—I appear on behalf of the above swift-footed bird to pray that the severe, and as I think unjust, sentence passed upon find by Dr. J. W. Gally of Pajaro township,

Santa Otra county, be mullified, it gave me persondent, these in addition to the correspondent, these in addition to the many peculiar habits of the creature I seek to defend, peculiar habits of the creature I seek to defend, that the stip on through life bearing the distinct of the creature I seek to defend, that the deliver to the processor as well as on the Pacific Coast.

\*\*As a vermin-destroyer, the road-runner fills a supportant place in Itonier and appreciated the nondier and appreciated the anywhere else on most important place in Itonier and appreciated then anywhere else on our aboves. One American Iriend, who lived from any years in that republic, gives me trustfaments in the republic, gives me trustfaments littled aughter had appreciated the anywhere else on our aboves. One American Iriend, who lived from any years in that republic, gives me trustfaments in the republic, gives me trustfaments in the republic, gives me trustfaments in the cleared the bridge was quite as any of the domestic lowls, worthy information on the aughter, for a long time bit down and appreciated the bringer, which as guites as any of the domestic lowls, and he cleared the bridge was brighly valued for the promess and prestrict of the council of the bird were contracted as being extremely comical at times, ground of rats, gophers, mice, angles, scording of rats, gophers, mice, and prestried as crokets, and brighty valued for the intendent of the down of the did not beiter account, as a sealth of the angles of the did not beiter account, as a mask was cashly done, he made heared by comments in the bring or tendents, which, by reason of its jointed nature, was easily done, he made heare, as the proper at the process of the paste to form and not sound and sound and sound and sound and processed, as and describes notice of such branches around his process of conducting to the property of the sander seek by the processes, and breaking of the processes of the proce

CORRESPONDENCE.

We admit, unindersed, opinions of correspondents,—. EDS.

On Maintaining the Territorial Integ-

EDITORS PERSS:—What you say in a recent dimber of the Perss touching the proposed di-vision of California seems to me timely and

aidt emit ett as sinrolifa of tasbiser a saw I pertinent. The remark that the men who fixed the present boundaries of this State builded better than they knew is warranted by the facts

I was a resudent of Mainornia at the time time tune duestion of forming a new State and giving appeats the forming a new State and the diese cused around the camphres and at the primary cused around the camphres and at the primary their backs that, by a large majority, firmly set their day had, by a large majority, firmly set their the trace, our knowledge of the territory out of which the new commonwealth was to be ercoked was masger. But what we did not know we guessed at, and, as subsequent events know we guessed at, and, as subsequent events way.

we we will dead to the standard of the control of t

Lebieve it had something to do with that matter.

About the middle of August, 1849, an inclourablough the middle of August, 1849, an inclourablough and as a beld at Sutter's Milli formal meeting was held at Sutter's Milli formal pied the minds of the clour residents; the more recent arrivals, who had by this time begun to recent arrivals, who had by this time begun to be a numerous, being, as a general thing, more given a numerous, being, as a general thing, more given a numerous, being, as a general thing, more suffered about getsting to work at gold digging that about getsting to work at gold digging had all, among them being the and panel on weeshing. William E. Shannon, then already elected delegate to the Comastinational Convention to ber; Clarkson Dey, Charles E. Pickett, William E. Shannon, then already elected assemble at Monteery on the 3d ay of September; be to the Constitution on the same per secunds and the Elihu Anthony, now livring at Santa is met Elihu Anthony, now livring at Santa the the Elihu Anthony, now livring at Santa is the writer. Ay unpression is that Elihu Anthony, now livring at Santa the Oruz, was also present. About this, however, is among that Elihu Anthony, now livring at Santa the Oruz, was also present. About this, however, as no present.

Affairs.
At this meeting it was unanimously sgreed that.
At this meeting it was unanimously sgreed that
the organization of a State was desirable, the
only problems that seemed to require serious
consideration being those relating to boundary
and the exclusion of slavery. On the subject of
slavery the two principal speakers were Dey
slavery the two principal speakers were
slavery the two principal speakers were
slavery the two principal speakers were
slavery the two principal speakers
and Pickett, he latter advocating the admission of "the opporant, a
speakers and some of the pates, speaking with more coolness, but with such effect
ing with more coolness, but with such filest
was left without a single supporter, though
that we have the speakers disposed with
the opporation of the construction of
the very speakers.

the the transfer of transf

### Missionary Ridge.

lisan Wehner, is now on exhibition at the lisan Wehner, is now on exhibition at the corner of Tenth and Market streets, San Francisco, and should be seen by every francisco, and should be seen by every bover of artistic excellence and historical lover of artistic excellence and historical lover of the civil War," was the most accuracy, portrasyed on canvas. "The bare feed of Chattanooga," says Dr. Draper in his accuracy, portrasyed on canvas, "The bare certainly the most picturesque of the war," "History of the Civil War," was the most certainly the most picturesque of the war," "History of the Civil War," " as a specificant of the strike-scene was every framed in such a magnificent landscape, and the phylophy has the artist seized upon the most of Missionary Ridge, just within the Confederate lines. Five States are in sight, in the sour of the Rocky Eace Range in Missionary federate lines. This States are in sight, in such a magnificent perspective may be seen the federate lines. This States are in sight, in sagnificent perspective may be seen the saptron of the Rocky Face Range in Malabama, And in past of the Pigeon Kange in Malabama, And is part of the Pigeon Kange in Alabama, And is part of the Pigeon Kange in Alabama, And is sees the town of Chattanooga, encircled from all land approach by lines of forts, batteries and rifle pits, to his rear is the valley of the Chickamauga, where, on the zoin ley of the Chickamauga, where, on the zoin ley of the Chickamauga, where, on the zoin 1863, painted under the supervision of Wil-"Storming of Missionary Ridge," Nov. 25th, The magnificent battle panorama of the

then had obtained their iron from Morique and fournita (present Tascany), very soon learned fournita (present Tascany), very soon feared for the forestend of the original form of the original form of the mines and applied to them without delay the perfected applied to them without delay the perfected approximately.

### Old Corporations of Latium,

Methods based upon the ideas of chemistry and Methods based upon the ideas of chemistry and retural philosophy practiced in the colleges.

Their, founded by Muna. Let us now raise a control of the veil which covers that by write and imperence of the isolated habor of a foogen in presence of the isolated habor of a profess. He control is the miner, and imited apparates. He comminer, the same time miner, it is and imited apparates. He comminer and imited apparates. The Roman miners and forgers are at work. The Roman colonist is here the sole master; he is the principal principal profess. The Soloning a property of the State. The Soloning a property of the State. The Soloning a property of the State. The soloning the cred Medical deligible is the procured by dispensed their state of the cred by dispensed of soli, or they are the condemned Homens of all soly as the Russian deportees are to-day sent to Siberia. The cunicularii (mining operatives) acity, or they are the condemned by dispensedores are different and the control in the mines, and or procurators. The success of the intense of the corp or procurators, and or delayer the iron or procurators. The scient of delayer the iron and convey it to the furning presention and of the citicallarius (pack-saddle), a horse or aid of the citicallarius (pack-saddle), a horse or mile caritying a pack-saddle and some panniers.

The caritying a pack-saddle and some panniers, mile caritying a pack-saddle and some or panniers.

Manufacture of Iron in the Gallo Roman been perpetrated through the centuries, antii file form, and without modification in their form, and without any advance in the methods which they have the upperstion from the beginning. Therefore, we infer that the apparatus the and the manner of working the iron which these backward peoples employ, if not exactly the earne, at least resemble very much in the casemble, the poor furnaces and the simple means which our dailic ancestors employed means which our dailic ancestors employed most than 2000 years ago.

The Seven Great Military Roads

Simple and the control of the contro both sides. All night long the Confederate signals dashed in sight of both strmies, withing hier hier fiery symbols upon the sky. Believing hie lift wing posted securely on Lookout an our be kidge. With the faint dawn of light but he division to strengthen his position on the kidge. With the faint dawn of light but he division of an attack on his buseg's expectation of an attack on his real mysteries of the day were veiled by the light seemed to be about realized, but the light seemed to be about realized, but the light seemed to be about realized, but the light seemed to be about realized, by the light seemed to be about realized. However had sursneed his mysteries of the day were veiled by the busentime Sherman was sin the saddle and his attack daylight he was in the saddle and his attack and shift had been anoved basinly upon him. Crant was standing on Orebard knob, wast kept up furiously all day. As 5hertoned the trip the chemy and their base of supplies, the Confederates moved beavily upon him. Crant was standing on Orebard knob, wast amphitheater. Trustingly relying on Sherman to hold his own on the left, strugting with an overwhelming mass, he waited moment had come. The thunder-bolt was more the o'clock, at a signal of six and hurled.

At half-past three o'clock, at as signal of six and si

Mow they have resched the crest. Tot a few moments there is a sharp hand-to-hand fight, but the day was won and Bragg and Breckinridge, in person, barely escaped Sheridan's troops as they came rushing over the summit. At nightfall, Bragg, both purtue stanooga, the most important stronghold of the West, in possession of the Union forces.

Last Saurday the panorama of this great strategic and picturesque battle was thrown open to members of the press and other invited guests, chiefly veterans of the was. Gen.

Last Saurday the panorama of this great strategic and picturesque battle was thrown vied guests, chiefly veterans of the was the war. Gen.

L. Elliott, who of the Canbertand, Col. Corps of the Army of the Cumbertand, Col. L. Howard, who has a lively particity in the struggle, and Colonel Lypart in the struggle, and Colonel Lypaper in the factory of the magnificent scenic effect.

A TERNAM MARIA is being erected at the magnificent scenic effect.

A TEX-STAMP MILL is being erected at the old Meadow Lake district, the owners of which claim they have district, as process whereby they decovered as processes whereby the tractions metals contained in the rebellions ores into bullion and leave a margin above the cost of production.

Women as Inventoes.—Up to Dec. 14, Jas6, there had been granted to women by the United States, letters patent for 1935 inventions.

The Beven Great Military Roads of the Chamstock, New, the constroke, Mey where the leave the control of the Changlock, New, the leave in the Beven Roads and best that could leave the control of a star, and transmit signals to not the country, of water one to proximity of water-earlies to the control of the surface of the sun best that cold lead, the parameter of the sun colonists control of the numerous cont dwarfsh-looking trees and warted with knobs and knolls. This plain, clear up the slope to where the observer stands, was the chief theater of the bloody drama that cultified. This state of Missionary Ridge. This charge is the main feature of Ridge. This charge is the main feature of the panorama. A sort of baze rests over the landscape, for it is now 4 o'clock in the afternoon, and the sun is dropping out of afternoon, and the sun is dropping out of a feeting the chind the bills. A thin cloud flecks the shaggy brow of Lookout Mountain, but the shaggy brow of Lookout Mountain, but a sudying the pills. A thin cloud flecks a good eye may see the spectral flag of the beatif above the clouds.

In studying this picture the observer will be battle above the clouds.

The battle above the clouds are the the clouds.

The battle above the clouds.

The battle above the clouds cherar activity prevails about the C. and C. on the C. and the California stamp and paramilia on the Constock, Mev., where the new water power is being put in. At the C. and C. shaft the C. and C. shaft the cut of the Pelton there are already two or three of the Pelton work is also in progress at the surface. There they are putting in position a heavy iron shaft ing the trough the building in the through the building the tothe northward through the building the cover which will pass the steel with the towers over which will pass the steel wire gables for the transmission of the power to the caples over which will pass the steel wire paramission of the power to the paramission.

A. T. DEWEY.

side, is next after Texas, California and Alaska, the largest political division of the United the east. Montana, which bounds her on that A more sensible thing than this dismember on A mo transgranger of Idaho would be her enlargement. big as Nevada, enough, Washington Territory being nearly as which cover already an area fully large What folly, then, to go and partition up this embryo State between its neighbors, both of delayed much beyond that time is certain. The Proposed Obliteration of Idaho, people to entitle it to admission to the Union is highly probable. That such condition cannot

would give a more symmetrical form to both besides more nearly equalizing their area 113th meridian west from Greenwich. This, should be shifted east to about the little or the and taking from the former a considerable area that naturally belongs to her. The boundary line, instead of running where it now does, ment becomes to them extremely burdensome; tants that the maintenance of a State Governountry, giving an awkward form to both, member of the Union, contains so few inhabivery irregular, but it atrikes diagonally across which adjoins Idaho on the south, though a line between Idaho and Montana is not only Next, we are told that the State of Nevada, respectable State. The present boundary ever, will she possess enough people or wealth to warrant her being erected into a State. States—much larger than is necessary to make being, it is argued, that not for a long time, if present territorial organization; the prospect limited to justify the expense of keeping up her tion of Idaho is too small and her resources too First, it is alleged that the populahalf to Washington Territory. The reasons ashalf to the State of Nevada, and the northern of Idaho divided and annexed, the southern Text session of Congress to have the Territory It appears that an effort is to be made at the

ricultural, grazing and mineral resources an inhabitants, not more, perhaps, than 16th than Nevada, it is true, contains but a small number interests it is probable this scheme has been concocced. And, first, as regards population: entertained, even by the politicians in whose wonder is that they ever came to be seriously edt tadt thgiewelttil oa medt dtiw gaiyrrae To our mind they seem utterly insufficient, nemberment of Idaho. mission. These, in brief, are the principal ar-gaments adduced in favor of this proposed disadded to her present territory, would bring with it enough population to entitle her to ad-SCIENTIFIC PRESS PATENT AGENCY, Entered at S. F. Post Office as second-class mail matter Union, and which, were northern Idaho Territory, anxious and almost qualified to enter serious talk of seeking restoration to a Territo-rial condition; and then we have Washington o much so that there has, in times past, bee

ersceptible of great enlargement. To a realiza-tion of her advantages in this respect her ining capacities are likely to show themselves of artesian wells both her grain and stock-raisimmense, although not yet much developed. Through recourse to irrigation and the sinking MISOCELLA WEOUS,—Origin of Metallurgy, 16S.
MISOCELLA WEOUS,—Origin of Metallurgy, 16S.
MISOCELLA WEOUS,—PROCRESS.—Steel-Cut Vails
vs. Wire whist; Petroleum in Boilers, "Soda Eaginess,"
werthy Thinking About; Tensile Ste and Timber recently.

Personal, 166.

Quicksliver Mine; Abert's Automatic Safety Elevator;

Garfield Mune, 161. The Wew Penorana Building;

S. F., 163. The Lase Acron & Sarrent, 165.

CORRESEPONDENOE—On Maintening the "ferrite to form in the graph of the Sarrent Sarrent, 165.

CORRESEPONDENOE—On Maintening the Pondtoning Integrity of the State; Defending the Roadtoning Integrity of the State; Defending the Roadtoning Sarrent Sar EDITORIALS.—Albert's Automatic Satety Elevator; Calico Mining District, 161. Passing Evonts; The Proposed Obliteration of Idaho; A 'New Wire-Rope Making Machine; Exporting Eleoh, 164. The Water and Timber Preserves of California; A. A. Sargent; Preserves of California; A. A. Sargent; Preserves of California; A. A. Sargent;

Workly Thinking About, Tensile Strains in Steel Manufacture, ILS.

SOIEMTIFFU PROCHESS.— Nature's Devices: Conquering Nations and Health; The elemence of Storms on Subhternanan Telegraph Inners, Soperating Wool from Vegetable Fibers, The Stones of the Pyramids; Trees, Etc., Growing Upon a Chacie, ICS.

Upon a Chacier, 166

SOURCE, The Storms of Storms of

TABLE OF CONTENTS,

Saturday Morning, Sept. 10, 1887

DEMEY & CO., PATENT SOLICITORS.

Our latest forms go to press on Thursday evening.

Advertising Rates.

Terms of Subscription. S. New authernal Babeription will be Annual Easternace of Subscription without cash in advance. All arreaseges must be paid for at the rate of \$3.50 per annum.

Office, 220 Market St., N. E. con. Front St., S. F.

DEWEY & CO., Publishers.

CIENTIFIC PRESS

MINING

Address this literary and business correspo and Dratts for this paper in the name of the firm.

MUMINE STATES AND A STATES AND

### Passing Events.

great scaroity of water on the peninsula. As an indication of the State's development have never amounted to much, owing to the part of the country, though in some cases rich, Reports are received of the discovery of placers some 80 miles southeast of Ensenada, Lower California. The placer mines in that

formed in California in August, mainly land, it may be stated that 140 incorporations were

The destruction of the town of Calico, San water and real estate companies. This is the largest number ever known to have been filed

is disservous in the extreme. It will take some Bernardino county, by fire, following so scon after the destruction of the new 60 stamp mill,

of Oregon is an important thing for this Coast, time for the camp to recover this setback. The proposed development of the iron mines

THE Truckee Republican says; Work will will command more attention. to 50 tons of charcoal pig per day. The time to fill soon come when California's iron interests The company expect at present to turn out 40

large crosses, which will mark the spot where the Donner party built their cabins in the memorable fall of 46. smos to noitoere et the erection of noos

M. T., has purohased the Poorman and Leland mines on Canyon creek, Shoshone Co., Idaho. The price was \$136,000. A STRONG syndicate of capitalists of Butte,

SAN DIEGO exhibit at St. Lonia will contain QUIOKSILVER exports by see from this port in August were 671 flasks, valued at \$26,217.

a 600-pound turtle.

sources of immigration. But now that it has been connected by rail with both the East and off been placed at a disadvantage, Montana and Dakota interposing between it and the great that of Meyeas. This territory has heretofore

sround a central wire or core. around the two layers, and a strand is then formed with three layers of untwisted wires a third layer of 18 or less wires can be laid or tess popping, the same process can go on and at third revolving frame, provided with 18 strand-core in the proper spiral, so as not to strand-core in the proper spiral, so as not to speed with relation to each other. This in-sures the 12 wires being laid around the by operating devices, and are driven at a proper The two portions of the apparatus are united o anoitulover edt to beteint yllariqa gaied tuo the same to be covered with the 12 wires withthence delivered through the laying-head of whereby the arts ai ero barara edit bereing the suraraque edit in noistond brosses at a farond through the second portrain ing land besides. She has a United States strand-core, and a machine for laying the ex-terior wires around the strand-core, are com-bined in one, with an intermediate device railroad and has within her borders more good farming land than is comprised in Massachu-setts, Connectiont, Delaware and Rhode Island apparatus in which a machine for forming the She contains now nearly a thousand miles of

ING AND SCIENTIFIC PRESS Patent Agency an

manufacturer of this city, and the inventor of

-am suo ni svoo-basrts sht gnimvol tern yd qu bial need ottentid yllareneg evad abnarte

wires, each atrand consisting of 19. These completed the entire rope would consist of 114

gaimrof , bisi ere seriw xis doidw banors, ere making flexible wire rope consist of a central

The use of wire rope has very largely in-oreased of late years. Aside from its use for ships' rigging, it is in great demand for cable railroad and mining purposes. The strands for

A New Wire-Rope Making Machine.

Mevada, which it joins on the south, other simgular point of Arizona that lies west of the Col-orado river, and added it to the State of

A few years later that body cut off the trian-

the western half into the Territory of Mevada, form to Territories lying contiguous. In 1860 Congress cut Utah Territory in two, erecting readjusting division lines as to give better there is ample warrant, as well as for otherwise

part of one Territory and adding it to another,

ering how much mountainous and comparative-ly barren land they contain. For cutting off a

being large enough, but none too large, consid-

metrical in shape and well proportioned, each

countries corrected, as above suggested, our Pacific States and Territories would be sym-

o meet with prompt and effective resistance.

not, the attempt, should any be made in Congress, to obliterate Idaho from the map, ought

Territories. But whether this shall be done or

With the dividing line between these two

examples being numerous in the political

history of the country.

These strands, after being completed, a serial riese are series of the twires are again laid a series as a series and the series are series

By means of certain reverse curves through

warehouse in San Francisco, at Mos. 13 and 15 Fremont street, Abner Doble, manager, where question. Park Bros, & Co. have a branch that is needed to settle the foreign market lar heat of the natural gas has settled the ques-tion of quality beyond all dispute, and that is the property of the settle of rescon are ready to jump for any good Ameri-rescon article that they need. The intense regumore or less jealous of each other, and for that man manufactures. The countries are all made in England, and, of course, despise Gerits good qualities. They do not like anything says, are eager for it and always ready to praise considerable time in Europe said that he was surprised to find how little prejudice exists there against American etsel. The French, he

Aneqa and odw mil odt to evitutneserqer A co and Canada.

claimed the suppressey in this line for a centry or more. In addition to the European trade, the firm is exporting hundreds of tons of the same class of goods to South America, Mexthe same class of goods to South America, Mexthe donble that of any plant in England, which has than any other firm in the world, and probably Park Bros. manufacture more fine tool ateel this exportation has brought out the fact that ones of the sub-agencies amount to a carload or more. The investigations in connection with back to the same country that it came from originally. Some of the shipments to different fine steel by Pittsburg manufacturers, and sent ish iron is imported to this country, made into

-bew2 tadt si ebert sidt to erutsel eldston A

In reply he seid.

In reply he seid.

"The impression has been gradually gain.

"The impression has been gradually gain.

"The impression has been gradually gain.

"The strong in Europe for years past far as a dege tools made in America were far superior to those from any other country.

England not excepted. This led naturally to contry, the inquiry as to whether it was the superior material or superior workmanity in shaping the industrial or superior workmanity in shaping the interest of the fact of the are laid up on a rope by means of an apparatus having a suitable laying-head, so that when

ru reply he said:

quiry for the goods or merely as an experiment,

-ni yd tuoda tdguord need bad ti li bus beneqo traffic was asked by a Pittsburg Commercial.

acri bas leets eat ai bearolaillew asm A . gaige

an article in the making of which England is supposed to beat the world, is highly encour-

the world, and the fact that they took hold of

ni sərutualunam naoitəmA ni stebatt ngierof

are handling the steel in the countries more tioned, and report their expectations as more

sale of the finer grades of steel, particularly that used in making edged tools. The business has already passed the experimental stage. Bagehaw Bros. of Paris, London and Bruseels are bandling the steal of the stage of the steal of the stead of the steal of the st

Pittsburg, Pa., in six or eight of the principal oities of Europe, India and Australia for the

The advantages of superior workmanship and matural gas have overcome the low wages of England and other European countries. Within the past few months agencies and local branches have been established by Park Bros. & Co. of the Black Diamond Steel Works, Pathony and Steel Works, in six of eight of the orinoinal Pittsburg, Pa. in six of eight of the orinoinal

It will surprise many to learn that fine steel is being exported from this country to Europe.

Exporting Steel.

work, and having the driving gears or pulleys by which they are driven simultaneously from a continuous apparatus, by which the strands are completed and ready to lay up into rope.

chine being built in the same supporting frame-

machine as it enters and passes out through the hollow spindles. The two portions of the ma-

twisted or knotted by the revolutions of the

They are among the largest

many devices connected with cable road systems, has recently patented through the Min-Mr. A. S. Hallidie, the well-known wire rope through a second machine, so as to lay around it the 12 wires which complete the strand. chine and then taking this core and passing it

which the strand-core is carried in passing into and out of its second portion of the apparatus, this core is prevented from being specially and the business has greatly expanded of late, this core is prevented from being specially.

will within the next ave years contain enough try in the Far West has better prospects in this respect than Idaho. That this Territory erable farming and grazing resources, are des-tined to fill it up rapidly with people. No counthe West, its rich mines, coupled with considtoo is comparatively limited, there is reason to believe that it will increase even faster than As regards the population of Idaho, while it poverty or paucity of population as an excuse for anything they may desire to do or not to do. people should be the last in the world to plead erected and paid for, is out of debt, and her State, has public buildings of all needed kinds, Mint located at Carson City, the capital of the

all put together, with four times as much graz-

her industries, such manifest improvement as denotes for her a steady progress in the future.

lis ni nwode resq eresq Isreves tot eat etate trin

trom the reaction of so great a disappointment, realized, her vast mineral resources have, never-theless, fully been demonstrated. Recovered

quent rapid influx of population has not been

limits. While this expectation with the conse

the precious metals would be found within her

couraged the belief that other like deposits of ganized and admitted to the Union, the great prospective wealth of the Comstook mines en-

such desire. When in 1864 this State was or-

strain the financial resources of her citi-zons, severely. While the people of Ne-vada may desire to extend their terri-tory, we hardly think they would care to have poverty assigned as the ground of such desire. When in 1864 this State was or-

nce of a state organization will not be likely to

rapidly in the future, so rapidly that the mainten-With so many sources of saistleble wealth the escape escape to increase habitants seem only recently to have awakened

ment of the law. ing to their mandates, not only slosed his own mine, but conneelled general obedience on the part of the miners to the authoritative stateof hydraulic operations, Senator Sargent, yieldwas made to work this ground by the drift process. The effort has not, however, been at-tended with any large measure of success. When the contra terbade the longer continuance of have the contra terbade the longer continuance

### Personal,

satisfaction of the company. He has achieved an enviable reputation in his profession, and one which is well deserved. Gardner F. Williams, the well-known mining engineer of this State, has returned to Califfornia for a few weeks, preparatory to removal to sold for a few weeks, preparatory to removal to sold for the famous De Beers dismond mines at Kimbe famous De Beers dismond in one which is a berly. The appointment is one which is a street, both those who know Mr. Williams feel neer, but those who know Mr. Williams feel neer, but those who know Mr. Williams feel as an additional to the assured that he will fill the position to the satisfaction to the satisfaction of the company. He has achieved satisfaction of the state endiates and expertation in his profession, and

vergaged are not some some the control of the second and as and is stayington, is on a visit to California, and is staying at Berkeley. Mr. Stearns has always devoted much of his time to soientific purenits,
and is now in a position to indulge his testes
and purene his studies under most favorable
supplies. R. E. C. Stearns, formerly secretary of the Board of Regents of the University, but now engaged at the Smithsonian Institution, Wash-

Col. F. Von Leicht, C. E., has left the city col. F. Won Leicht, C. E., has left the city appointment at the quickeilver mines at that

-mi nistres to englate to take to englassim immotive mine of Arizona, has arrived in this city.
William Lyle, the president of the Quijotoas, Hank Murray, superintendent of the Loco-

provements reported there.

Aug. J. Bowie, one of our most prominent minks and surhor of a book on withdrawis mining in Oslifornis," is absent on a visit to the East.

Geo, J. Speokt, C. E., agent for Col. Waring on this coast, has returned from San Diego, where he has been superintending the carrying out of the sewer system now being put in at that eith

that city.

Prof. J. D. Dana, the eminent geologist, has returned from the Hawaiian Islands and is

and that region. spending a few days in San Francisco.

W. A. Goodyear, geologist of the State Mining Bureau, who has been doing field-work in
southern counties, left the city for Monterey
county this week to investigate certain deposits
in that region.

of coal in this city are comparatively light, there is no reason to fear either a famine ovany very great advance in prices. The recent advance in the price of coal from the coast vance in the price of sold from the coast of the price of the higher rates of freight demanded by shipowners. dented heavy movement of lumber from the northern mills to San Diego. Although stocks Coal tonnage is very scarce in this port at present, and freights are very firm at \$2.375 per ton from Puget sound, and \$2.75 per ton from Mansimo. This is owing to the unprece-

slone, or two or three together, and make good worked alone, and now has \$2500 saved from his year's work. The hills around Darwin are full of small ledges where miners could work THE Inyo Independent says: One year ago a poor Italian began working a small mine prospect at Darwin. He has all the time

ioins the company from forfeiting the stock of holders who refuse to pay the assessment. from collecting an assessment levied on the stock on August 8th. The injunction also en-A DISPATCH from New York says that Judge One not confined and such and the Carlot of t

will be thoroughly investigated, and the company will determine whether they will put the THE Tecoma. Ledger says: Peter Kirk of the English Iron and Steel Company has bonded for 90 days the iron mines in the Gleelum mining district. Doring this time the mines mill be theorem.

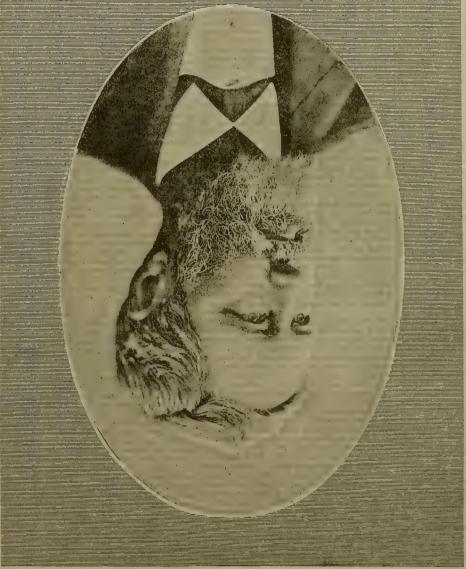
DURING the past month nearly 200 mineral locations have been made in Siskiyou county,

end he soon passed from the case to the edi-The subject of this sketch was born in Mewarian diplomatically unclaimed. He resigned to state the selection was born in Mewarian distribution of this sketch was functionally of the selection which is trade.

The subject of the left school and went into a principle of 15 he left school and went into a principle of 15 he left school and went into a principle of 15 he left school and went into a principle of 15 he left school and went into a principle of 15 he left school and went into a principle of 15 he left school and went into a principle of 15 he left school and went into a second school and the school and the

A. A. Sargent.

spred of an inexhaustible supply of lumber. In- and careful study of the law. In this field his of the paper. During his journalistic career he employed his spare moments in the carnest The Mark M. Stone. He was regarded as a chard-red for a farmer M. Stone. He was regarded as a chard the date for the U.S. Senate in 1886, until the date for the U.S. Senate in 1886, until the beautiful that the decrease of the chard carded had been esteer had olesed, and settled down opicial cardes that olesed, and settled down and the chard cardes of the chart cardes of the chard cardes of the chart cardes of the chard cardes of the chard cardes of the chard cardes of the chart cardes of the chard cardes of the chart cardes of the chard cardes of the chart cardes of the chard cardes of the chard cardes of the chard cardes of the chard cardes of the chart cardes of the chard cardes of the chard cardes of the chart cardes of the chard cardes of the chart ca comprehend the extent of the ntilities here stored in a stored and sense in the percentage of the store and the store in the store in the store is the store of the store in the store is the store of the store in the store in the store is the store of the store in the store in the store is the store in the store in the store in the store is the store in t torial chair, and later became the proprietor a compositor on the Menada Journal. His in-dustry and perseverance attracted attention San Joaquin. Early in 1850 he went to Merada City, where he engaged for a short time in mining, and then settled down to hard work as



THE LATE AARON A. SARGEUT.

of the public. He leaves a wife, son and two daughters, the eldest daughter having attained ust 14th departed this life to the great surprise

again to the carnest practice of his profession, and was called into several important cases. During the year past the suffered trom ill

cancus selected Leland Stanford. He then tool

offended Bismarck, his position in Berlin be-

long time one of the most productive and profit-able claims of the kind in the State, having been successfully worked till this branch of county, was owned by him and his partner, Jacobs, for many years, the ownership continu-ing to the end of Sargent's life. This was for a dence in California, The Sargent & Jacoba hydraulic mine, situate at Quaker Hill, Nevada a high liferary standing.

Senator Sargent, while he did not at any time engage enough in gold digging to entitle him to be called a practical miner, was at the properties and purentis during his entire resistence in California. The Sargent & Lacohe denote in California.

his constituents than Senator Sargent, Mo representative in the House or Senate from 10 of the demands of the desire are since and the senate of the sena full term of six years. He took his seat in that body on the 4th of March, 1873. Here he held several responsible positions and was for some time chartman of the Maral Committee. committees, and his services were honored by an election to the United States Senate for the base Sign is belocied in the Was re-elected in Segn. 7470. While in the House he was recognized sea man of mark, placed on many important vada county. In 1860 he was elected to the House of Representatives; the term ending in 1863, he returned to the practice of law in Me-

By President Arthur be was in 1882 appointed bas grates Minister to Germany, and

work that it has been thought only coal or other fuel could accomplish. and the constraints. In this aspect of the case of the case that are not size in the case of the case lated their ability to so convey power we may yet expect to see machinery driven all over the State by motors located hundreds of miles away purity.

Formerly these mountain streams, owing to the memoreness from manufacturing localities, were regarded as of little importance. But now all this is changed through the readiness with which such power, through electric conductors, can be transmitted from its source for long distances without suffering material diminution of its force. If the electricians have not miscalculate force. If the electricians have not miscalculate force and the force of the property of the and wholesome water, this and found a congenial home, and his labors head been a man of such extremely of the greatest from the Sierra Nevada being of the greatest from the Sierra Nevada being of the greatest from the such surface. In recover, but he suddenly greatest surface and a suggestion of the greatest surface.

out an ample supply of cheap

use can be carried further on and supplied to towns,

irrigating purposes, as it covo-ers not only the great inte-rior valleys, but also the en-tire footbill region of the to, oof , did not of it, to, serves. As much of it, to, serves as a man of or such as a per entire of the covor-

for the propulsion of machin-ery, but also for extensive ylno ton eldaliava ebam ed yli water-power of almost illim-itable extent. This water, with such a head, can read-

and rivers as exists here. And these rivers, falling a feirnis, fishers of feet, furnish a

anything like it? In vain we look to other countries for such a system of lakes

And the hydrography of this part of California, is there elsewhere in the world

this artiole, for these for-ests on the Sierra will out-live those in every other part

esent mort reducil to nois

divides, affording inoreased strongeneral and rot seificial

legioning out lin qu tlind od niem eth moni gaineser fliw syellav ent ni sannrt

of its timber. These lands will therefore forever remain will never be wholly cleared produce themselves, and be, so desired to the land some the land to the land to the solution of the solution o

-or yawn duo sa dash as sdeovol expanatible, because thes

reaching up to the timber line, the future is asthe magnificent forests that cover this range,

Looking at these mountains so rugged and broken, large portions of them towering into the region of perpetual anow, few persons fully

wealth, which, though only secondary in im-portance, have been measurably overlooked. Foremost among these are the timber and water applies afforded by the Sierra Alexana,

muoh, shout the great excellence of our Califor-nia soil and olimate, But the State presence certain other natural advantages and sources of

A great deal has been said, yet none too California.

lo sevreser Tedmil has reteW edT

abaorliar emit eub al ont any special measures bedes them to set them to such anot back and dedicate them to such a great timber preserve, with-

of the State.

ed, in fact, ever be withsignolifa) to trad betsingoq cities, factories, etc., wherever situated, No densely

The Uncle Sam mine, 20 miles from Redding, spring of 1884. His radical aroundphip and the porte of the porte question having \$7000 per month, is said to be yielding about a mining as a said to be yielding about the porte question having the bydraulic method of washing, an attempt conded, American views on the porte question having the bydraulic method of washing, an attempt conded,

ing dust, Suoh meteoric bodies coming into the upper stmosphere obliquely are thrown off as from a highly elastic cushion. Striking at right sngles they are fairly ground to powder their impact against the unyielding air, and by their impact against the unyielding air, and it is only once in awhile that a piece large from only once in awhile that a piece large along the form a meteoric actone centrales to the carth. It may well be that meteoric dust thus produced in the upper layers of air is concerned in the peculiar sunset glows which from the impact of the acconding the time attention of the from order.

### SCIENTIFIC PROGRESS.

### Nature's Devices,

How They Are Imitated in Many Human

trom time to time attract the attention of the vorida, on Strake on Surater.

THE INEXCRAFF INEXC.

THE INEXCRAFF INEXC.

THE INEXCRAFF INEXC.

The condices where the stations are considered by meens of ambters and wires and accepted by meens of ambters and wires and accepted by meens of ambters and wires and accepted by meens of ambters and between the towns of Belovt and Desarous and Desarous included by the state of the state observed at the telegraph of March, 1885, midway because the towns the energy of the state o

How They are imitesed in many muther the many muther and inventions.

Inventions.

Most of the skillful devices invented by men for doing fine work rapidly can be traced to neture, where for countiess conturies they have been operating, says a recent writer. The distributions or mechanism might be shown that the inventors of the future will be those who earefully study the instructions of mills are another style of the molar teeth which grind all the grist that the most of an order of the male of partial of the fuest file of human manufacture is a rough carriage of parallel plates like carriage springs. The horse file of human manufacture is a rough carriage of parallel plates like carriage springs. The fluest file of human manufacture is a rough carriage of parallel plates like carriage springs of the fluest file of human manufacture is a rough carriage of parallel shafter compared with the Jutch rush used by carriage of principles in his mouth, and the hippopotory of the fluest file in his mouth, and the hippopotory of the fluest file is found in the jaws of a beer among the fluest has a powerful little triphammer. The woodpecker has a powerful little triphammer.

The diving-ball imites the work of the fluest file diving-bell imitates the work of the

penter's plane is found in the jaws of a bee, penter status and a factorized and provided in the jaws of a been received by the factorized plane is found in the jaws of the provided in the jaws of the provided in the jaws of the surject and in the jaws of the surject and in the jaws of the surject and in the jaws of the submoter with the bubble, displacing the water of and into and into a babble, displacing the water of a modern been mote the surject as the surject of the surject o

Definition of the conservation of the conserva

CONQUERING MATIONS AND HEALTH.—The conquering nations of great actolifects.

CONQUERING MATIONS AND HEALTH.—The conquering nations of all ages have been those conquering nations of all ages have been those conquering nations of strong bodies and trained minds. So, again, the same is true of national influences. The about the size of Rhode leland, yet her influence are a not clearly of countries the size of Rhode leland, yet berither of insertied enstem, but it is more than this. The hearts of merited enstem, but it is more than this. The hearts of the hearts of merited enstem, but it is more than this. The hearts of the heart gymnestic exercise. "Until their heart gymnestic exercises. "Until their heart gymnestic exercises." Until their heart gymnestic exercises. "Until their heart gymnestic exercises. "Until their heart gymnestic exercises of discipline, which were the heart gymnestic exercises. "Until their heart gymnestic exercises of the forther heart gymnestic exercises of the content of the forms the heart gymnestic end gymnestics, would have force not been converded all force, the heart should have force not been converded the server them. The training of the Romans was very larged their metal all disciplines are defect and electrons of the animals only. But they to strong them they relaxed their west of merities—hiring gladistors for their gones and athletic exervate under their metal games and athletic exervate the heart she were their metal games and athletic exercises—hiring gladistors for their was the merities—hiring gladistors for their sport and merities—hiring gladistors for their sport and ensistent of their metals games and athletic exercises—hiring gladistors for their metals and electrons of the merities—hiring gladistors for their metals of the merities—hiring gladistors for their metals of the merities—hiring g

METEORS STRIKING THE EARTH.—The atmosphere acts like an auvil to anything approaching aboreaching strikes are surjit to anything approaching the carth which very great velocity. To this scrion of the sir we owe our entire protection from meteoric bodies. Meteoric espones and meteoric dust, even traveling at the enormone takes of maracetratic of heavenly bodies, would care unfold destruction if they could strike unindered the surface of the earth. The strongest structure would be crusted by stones and human life be sacrificed to the rapidly mov-

every time the ship laid up in port, while her cargo was being lacharged and the return cargo being put in. We are not surprised, these cargineers, nor that they speak very strongly of its value. Every engineer has at hongly of its value. Every engineer has at bend, at a very low cost, an almost certain preventive of incrustation. It can be used every ventive of incrustation. It can be used every ports of incrustation.

### "Soda Engines."

Some of our contemporaries, says Wood and Indiana, seeds of the contemporaries, says Wood and Indiana of steam engines. During last-winter of the use of steam engines. During last-winter and early spring some experiments were made and early spring some experiments of make the interpretation of difficularies. These "sods engine" is a mismomer; it is early a team of sods, but to poor manage, was due to the or so cause to make the fallure and to the early a team of sods engine with a semi manage of the early a team of the property of condensing this steam the form of the condensing this esteam the early it is early, as a caustic sods engine. The early a team of the condensing this extent the early in the steam that the steam condensed is exhants team from the steam the early of condensing this esteam than the steam the steam in the steam condensed it is early to condensed it scanners the early of the early

the engine over a sufficient length of time, because you are a mechanic, blackamith, or molder, that it is necessary to carry the marks of your trade on your clothes when your trade on your clothes when your day's work is done? It shall be sight of dirt-beginally colour trade on your clothes when your day's work is done? It shall be sight of dirt-beginally colours and stin? We do not believe that there clothes and stin? We do not believe that there yet advanced their interests by neglecting to keep themselves itdy. Let the mechanic who have been in the habit of carrying his "trade has been in the habit of carrying his "trade they been the habit of carrying his "trade stop and think, and run over in his mechanic who have been, as general pride in his general unidines—Just his think; send run over in his mid the history serve him rightly, he will remember that those were the chaps who were always bromotions and better positions; and it his memory serve him rightly, he will remember that those were the chaps who were always to particular in taking care of their tools, never and bench who were always to land them. Those were the men who cased to be oparticular in taking care of their tools, never and thom. Those were the men who cared to be dubbed "told women," "fads," etc., they are now the makes man any the worse of the bromen and them. It does not make a man any the worse are always are now will, the world as it greater respect tor a clean mechanic than it has such a mer man and the men world as a greater of the and mechanic than it has a such a mer world as it greater respect to a clean mechanic than it has a for a dirty one.—Machanical Progress.

PETROLEM IN BOLLEES.—We add the following to what has a siredy been given in the properse.

TEASILE STROLEM IN BOLLEES.—We add the following to what has a siredy been given in this propers.

Boston. It should be remembered that a very factor in the bound of the use of performed with a profession of the use of performed that a very which has been in use six or seven years; very which has been in use six or seven years; very they had freshly been japaned with a they had freshly been japaned with a thing to be in japaned with a thing they work of learning the policy of the learning the work of oten present a second position of the japaned with a thing they work of learning the policy of the same a second position of the learning away the given the japaned with a thing the work of learning shape the w

### MECHANIGAL PROGRESS.

Steel-Cut Nails vs. Wire Nails.

The rapidity with Walls Vs. Wire Mails, Weeken Sates, and general use, especially in the active the very street states and the very street states, and the very states are states and the very street states, and the very states are states and the very state states and the very states are very states and the very state of the very states and states, and the tenancions of the discovery states and some very states of the very states and some very states and very state

An Unexpected Revelation.

While this matter was under consideration, and to more that matter as under consideration, and to more tully illustrate the fierce compettion now being carried on between cut nails and wire nails, the Ivon Age publishes an account of a test recently made by the Bellaire, onlio. The company procured from the manufacturer a keg each of the Itoliowing sizes of wire nails: 20d., 10d., and Ad. The number to these wire nails in a pound as advertised, and as found by actual count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to the pound of the count, and also the number to number t

\$50 \$00 \$50 432

The plan of testing was to drive the nail into a dry pine searthing to within a quarter of an inch of the head and hang weighte on the head nutil the nail pulled out. The following is the bodding power of anils thus tested:

It will be seen from this table that one pound of cut nails has a holding power as compared with one pound of when nails as follows:

I h 2004. Out wails equals 1.40 h. Wire Malla,
I h 2004. Out wails equals 1.40 h. Wire Malla,
I h 2004. Out wails equals 1.40 h. Wire Malla,
I h 2004. Out wails equals 1.40 h. Wire Malla,
I h 2004. Out wails equals 1.40 h. Wire Malla,
I h 304. I h

It will be interesting to see what answer the wire-neal manufacturers will make to this statement, which is on its face a very strong argument in favor of the cut nail, both as to quantity per pound (difference in price considered), and as to sotual holding power.

TREES, ETC., GROWING UPON A GLACIER.—A curious geological phenomenon exists in the vicinity of Behring's strait. At Elephant point, Kotzbue sound, a ridge two miles wide and S50 feet high seems to be a vast mass of ice, thinly this soil birches, alders and berry-bearing plants grow luxuriantly, with the stratm of perpetral ice as the underlying rock within less perpetral ice as the underlying rock within less than a foot from their rocks. THE STORES OF THE PYERMIDS.—A personal inspection of the pyramids of Egypt made by a quarty-owner, who spent some time recently on the Wile, has led him to the conclusion that the better builders than those of the present day. He states that there are blooks of stone in the pyramids which weigh three or four times as these that there are blooks of stone in the pyramids which weigh three or four times as much as the obelisk on the Thames embankment. He saw a stone whose estimated weight pramids ounted human labor lightly. They pramids ounted human labor lightly. They has done by pyramids ounted human labor lightly. They premids ounted most of their work was 880 tone, but then the pyramids 30 feet in length which fit so over the surface without discovering the break olosely together that a penkulic may be run over the surface without discovering the break it will make two surfaces 30 feet in length which will meet together in unison as these it will make two surfaces 30 feet in length which will meet together in unison as these thous will meet together in unison as these their will meet together in unison as these thous were randed to sech other.

It is supposed that they were rubbed backward and forward that they were rubbed backward and forward the case of other untail the surfaces were assimilated to each other.

Panama Canal Difficulties.

GOOD MEALTH,

facts About Malaria.

The exact cause of malarial ever, writes a state of the control of Action of the transfer of the Brank Canal Difficilities.

A origin in the affairs of the Parama canal authentities the desired to be regically approaching. Of late well authentities of the works have been to be regically approaching. Of the works have desired to be regical countries of the works have been to the minds of the works have been to the finished by those accession, leaving little doubt in the beginning, and it is take been to who have the countries of the present of the branch of the countries of the countries of the present of the countries of the countries. However, the countries of the countries. However, or countries of the count

nated in Europe in 1942. The topological forms of the forest of the forest of the forest of the following water.

Breathing wholly through the nose is of the water.

Breathing wholly through the nose is of the forest importance with respect to fever prevention. All air upon the land hea more or less impurities and germ life. If the purpose of the mose, and its membranes, is not to strain and considered the most of the forest of the forest of the most of the forest of

interest, the Calebra Out.

The Outlebra Out.

The difficulties of this situation, it is interest, and the calebra of the difficulties of this situation, it is on a date to the difficulties of this situation; it is on a date to the difficulties of this situation; it is dead to the difficulties of this situations in the care; "List point, or tell into the bed of the care;" Last the going to meters were wealted away at the good that the cate that and in the care in the cate that a process of the care; "List point, or tell this; is the fact that up to the care; where the only the care; "List of the care; the out is found to be moving body to the care; the out is found to be moving body to the care; the out is found to be moving body to the care; the out is found to the care; the out is to mone your body to the care; the the care is the care of the care; "Difficulties in Connection with the Onegones in one at the care, or the care; the care is the care in the care of the care; the care is the care repeatedly referred to by the one is care of the Chagres he care to care the care in the care of the care in the care in the care of the care in the care of the care of the year 1866.

You can the care in the care of the

Емвіреєвіна Дотея,

Automatic Stores.

USEFUL INFORMATION,

Ir you are tall, light of weight and narrow of cheek, your chances of dying of consumption are favorable. Live outdoors all you can and take care of your health.

Our Bodies are the instruments of our souls.

Therefore it is the part of wisdom to revenence and respect the body as the notify firm and of the mind. Treat it well, and with firm and geatle kindness. Cheok its waywardness; prick its dullness, and shame its self-indulgence. The prick its dullness, and shame its self-indulgence exercises as your natural temperament and confertution require, and do not mistake violence for exercises, neither the residence out for yourself the health of a man. Find out for yourself white it is often the interest of exercise, neither the health of a man. Find out for yourself white it is often the marker of exercise, your own way. In the matter of exercise, manch as you can get it in often well ways—not taking as much as you can get, but as little as an assument the purpose, and avoid that physical swears the purpose, and avoid that physical weathing the degrades the mind.—H.

The proposition to kill fever germs by burning sulphur in the open air may seem impractive sulphur in the open air may seem impractly freat enough to induce a trial under favor favor able conditions. The smoke of large cities and the campfires of an army are considered to act for conditions of an army are considered to act the campfires of an army are considered to act officients.

reavy art at night, and falls again as to refery the very art at night, and its the very art at night, and its recover and article united.

It is known that no malarial fevers exist in the region of sulpiur works.

The Abyssinians, when preparing to hunt the delephant in malarious districts, thoroughly lumigate themselves with sulpiur. Sulpiurous cold has been adone adopted by the Health Board of the General Government as the districts that to be used in case of an invasion by the cholera to be used in case of an invasion by the cholera is local. It has been the were simple and strongly it would seem to be a very simple and elective way to tail the fever germa by burning authory just at nightfall. Sulpinur is so very in experiment.

A few years since the writer was met with this should not but a very few from all selections as and the with the strongly of the strongly of the word of the sulpinur burned in the building made it habitance in the sulpinur in the constraint of the sulpinur in the constraint of the sulpinur in the proposition to kill fever germs by burning inc sulpinur in the proposition to kill fever germs by burning the page at the constraints in the constraints.

a self-dividing langus, which, on entering into the system, obsured the blood after the manner of a poison. In 1879 Prof. Tommasi Crudel full observed when in an article is fully confirmed the stove view in an article, as Kome. He named the germ bacillus and went so far in his experiments as to induce fever in individuals by exposing the germs, and went so far in his experiments as to induce fever in individuals by exposing the germ in their sleeping-rooms.

It is believed that germ rises on the beavy air at night, and falls again at or after the suries.

LUBRICATORS. A.—Sooted pamphlet on Judit-cators states that a first-class oil should stand exposure to a temperature of boiling water, in a water path of six hours, without showing say appreciable loss by evaporations, its flashing point should not be below 300°, and for cylin-der oils, not less than 500°. ADVERTISING ALWAYS PAYS.—It is a fact that no one who has advertised liberally and that no one who has advertised liberally and the best-spent money he put into his business. As a horse was never made fat by a single bushel of oats, so a single advertisement is never a perfect effect of the benefits of advertisement is there are perfect effects of the benefits of advertisement.

COPPER.-PLATED sheets of steel are made by Mr. P. H. Luniman of Pittsburg, which are restrated by him as better for many purposes than solid sheet copper. The sheets are made of decarbomized steel rolled to the proper thickness, electro-plated with copper on both sides and tinned on one side.

To CLEAN WOOLEN UNDERWEAR.—Put them at once into cold water for a day or more; then when soap is used it never should be rubbed upon the goods, but dissolved in water, and in the goods, but dissolved in water. Adding a little water of ammonia saves the use of much little water of ammonia saves the use of much goods should not all directions, goods should be stretched in warm water, dried and again rinsed in warm water, dried and again stretched, it is a custom with some to use a forest over which to estretch the garments in drying.

Domesticating Pour Littes,—There are few flowers more admired and sought after by ladies than the white, fregrant pond lilly. Experient has shown that it can be snoosesfully domesticated, or, in other words, can be coosesfully asked. All that is necessary is to obtain a large tub—for want of something better a barwed in two may be used, in which is large tub—for want of something better a barwed in two may be used, in which is some of the roots of the lilly and bury them in the mud, filling the tub with water. Procure some of the roots of the lilly and bury them in the placed upon a lawn are very beautiful when there is a bloom, They must be moved to a cellar during uniter.

There are numerous compounds advertised for preserving leacher belts from under wear and for preserving leacher belts from under wear and but it is better to let all such preparations along. Keep, belts and pulleys cleap, and as a rule they will do good work. Some leading throw a rule they will do good work. Some leading throw a gradual ing to keep belts dayible.

Resin is frequently used to producing an ing to keep belts dayible.

Resin is frequently used for producing an ing to keep belts dayible.

Resin is frequently used for producing an and for this tis well surject, it will soon be an early regard to the belt to the pulley to the surject, it will soon be and for this tis well surject, it will soon be and for this tis well surject, it will soon be and for this belt to the resin inc.

To stand make the last state of that belt worse the will give an inc. ground into the least state of that belt worse the mine to be will stand into the least the pulley.

Belting Co., we far called the low town of the punch being parallel with the belt so as to out a off an elley the name of the punch being parallel with the belt so as to out a draw being parallel with the belt so as to out a consideration being parallel with the belt so as to out a condition of the lower of the punch being parallel with the belt so as to out a channel being parallel with the belt so as to out a channel being baralled with the belt one to wait out a side of the out of the out of the being baralled with the belt so as to out. The each out of the belt should have any noise in same inch, and not there ince holes to any one one or inch, and not nearer the end. A four of them in the row nearest the end. A four of them in the row nearest the end. A suffer should have noise in same inch of a minch. The econd row should be at look, and not nearer the end. A make a minch. The econd one when the same inch of the mine the end of the end. On will only the safe state of an inch. The econd row should be the safe of minch. The econd one will be seen the the

Facts About Belting.

little moist, not wet, the spawn will quickly spread in about a shout a shout a shout a shout a shout a shout the while buttons will appear all amonth the best and in a very short time efter the best, and in a very short time after the total said mushrooms. Any position that the whole one full-sixed mushrooms, Any position for while grow them the whole not colder than 50°, will grow them the whole read armort be seen seen a spawning, Any place had from the earne spawning, and from the earne spawning, and from the earne spawning.

The streets of London, and, in fact, all the principal of the fact, and the fact, and the fact, and the principal cities of London, and, in fact, all the principal cities of London, are provided with a convenient apparatus, something on the principal cities of England, are provided with an abit of the seales now so common in this country on which people, by stepping on a platform and compine and conference of by dropping a cent into an and obtained with a device that school-children and opported states of the served may be now the served with a fact the cent into an and obtained with a fact the served with a little drawer will fly out, and in it you find a scheep may be now for an ease of the left to when the place wherein the copper is deposited. To the right for choocase, whe left is regulated by the place wherein the copper is deposited. To the right for choocase of put was a certain box, and out will come a cystecter. Wheat a bone for are the coingarette. By this device he is relived of all mpover of the left for but seeds the served of all mpover of the left for only ones cared for. The cude can brond to go into a cylera the cent, but who is to consider the left for but seeds in the conference of the left for the served of all mpover of the left for only ones cared for. The care in the conference of the left for the season with a county of places on the conference of the serve only to seed a contract the left of the stands filled with estanged envelopes, or a postel care who deposite the hands of a purchaser who deposite the hands of Eugland enjoys and the has a number of the stands filled with estanged envelope, or a postel care in the serve of the such mater of the stands of the proprietor of these automatic scales have found to deposite the hands of the proprietor of the stands of the proprietor of the stands of the serve only to contract the serve of the promoter. The automatic scales have found the hands of the proprietor of the serve of the promoter of the serve of the such on the serve of the serve

PARAFFINE should never be heated above the temperature of boiling water; at a higher temperature it is partially decomposed, and its real aleance diminished. It is well to warm the veesel containing it by means of a water bath in the same way gine is neually heated in an ordinary glue-pot.

To Remove putty from glass, dip a small brush in nitric or muristic soid, and with it paint over the dry putty that adheres to the proken glasses and frames of the windows. After an hour's interval the putty will have become so soft as to be easily removable.

HUBBER NOT IMPERVIOUS TO WATER.—) periments with a hermetically sealed rub bottle of water show that indis-rubber is absolutely water-tight,

How To RAISE MUSHROOMS,—Short horsed droppings, partially dry, thrown in a hesp and droppings, partially dry, thrown in a hesp and allowed to ferment, form the right kind of martials droised for ratising mushrooms artificially. A good way is to build shelves on the wall of a shed or cellar; fill each full of this material, press the droppings olose, cover with two or three inches of soil. Allow the bed a few days for the heat to rise, when it is ready for spawnfor of the passes of soil. Allow the bed a few days for the heat to tries, which have to be broken in the form of bricks, which have to be broken in the int, and set into the bed just below the soil, into soil is pressed in right, having a gentle heat and a Lithe bed is right, having a gentle heat and a fit into the heat and a sint in the bed is right, having a gentle heat and a

MINING BUMMARY.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

CALIFORNIA.

Departs to the control of a sperage of \$100 per 1.00 per

Nevada.

Iowa Hill.—Cor. Placer Hevold, Sepl. 3: The mines are not creating much excitement now. The Morning Star has deduced their drote for a time. I hear the water for the mill is short, but also hear that the gravel is rich as evert. McIntyre asys now that the fars got a good mine. Mac has driven two manels into the divide at a great expense. The remains in the Lyrn mine are yet favorable. Hohe son's Blue Wing tunnels progressing, and ere long we hope to hear of more slugs. I hear the uprise we hope to hear of more slugs. I hear the uprise say Red Point is expected to break through son.

Aboved as the total machinety.

A MACFARIAN MINE.—Grass Valley Union, Sept. 3:

A McFarland of Mapa, president of the Planet formed of Mapa, president of the Planet formed member is to the effect that a good bead of the series accounts water is flowing from the channel, and that all the gravel taken our prospects well in gold.

WACHINGTON DISTRICT.—Footbill Yidings, Sept. Machington mine, located feet in depth and bear bear opened up. Ledge from five to grave the town of the stame, is from xoo to soo feet feet in depth and will for the Wachington may conference and the property. Hoisting and pumping works. Machington works. Machington works. Machington works. Machington of the supering and or macreated. All the office will soon be increased. All the Machington have a working bond on the prosperior outlook. From x5 to 30 many operation of the property. Hoisting and pumping planets. A confine by miners. A confine bound on the properties appendicent. The company operation for the state of the Yachandarian which sports and pumping planets on the bair of machines of the lace and Wachnesday a quantity of very rich have a great fundine by miners. A co-stamp mill is to be pumping which is property. The subminers are stream from the ledge in the shall, which is property. The subminers are stream mill is to be pure to only be part of the late manager shattuck, to be pur up immediately. The employees of the Eagle Bird and Spanish miners. The Education in the base of the cope of the part and the decidence of the state manager shattuck, the properties never looked better. Too many i

BANUER.—Julian Sontinet: Ches. H. Bacon has sold one-half linetest in the Bacon mine to R. J. Sold one-half interest in the Bacon mine to R. J. once. The Hidden Treasure mine is looking well; the boys are running an uprise to connect with the old works so that they can get a current of sir. The Antelope mine is still taking out rich ore. The they now have it under control, but they now have it under control, they now have it under control, at imac. The Owens mine has stopped work for a time. The old shaft was considered unsafe and the mill will not be started up again until they sink a new shaft.

prospecing is being done at the present time than for years belove, and the boom has just stated.

THE HALLESTED MINE is in a fair way of being shortoughly prospected. Mr. J. E. Mills has sent several men to the mine and a ten-stamp mill will be several men to the mine and a ten-stamp mill will be put up as soon as possible. There has been several thousand olians spent in prospecting, and experimental the mine as possible, from 8 to so feet wide, all goldbeatness and promounce it good paying ore. There have a pronounce it good paying ore. There have a pronounce it good paying ore. There have a pronounce it good paying ore. There have not been seed to the Brandt mine in Genesee valley, informs us that the work on the bell mill will be in running order as soon as possible. Mr. Boulbes spent in the batch of the batc

And A Continued the state of th

# The divide for miles from just above Forest Hill is bonded or being bonded to different capitalists, and the upper the nest future. Damascus is lively, and the upper whivide is booming.

the nest fulfule. Damascus is lively, and the tupper divide is booming.

FOREST HILL GATHERINGS.—Work at the Mayowning to an increase of water, but work was reaumed last Monday, the water having decreased. A
notice was posted at the shaft and tunnel notifying a temployes that the work that is a considered to the constitution of the constitu Worked out,

GIBSONVILLE,—Tribune, Sept. 2: People at
Gibsonville wear a more cheerful look. Business
Gibsonville wear a more cheerful look. Business
months. A big scope of country between there and
La Porte is on the eve of being developed by a
La Porte is on the eve of being developed by a
prospecting quite extensively, so that raken also
prospecting quite extensively, so that raken also
gether Gibsonville bas a little brighter outlook than
STILL PROSPERING.—Mountain Messenger, Sept.
3: Baid Mt. Ex. Co. declared their 13th dividend,
Sept. 1st, \$6000. Gold yield for August, Sept.
There remains a handsome surplus in the company's
there temains a handsome surplus in the company's
well for the future.
Well for the future.

Siskiyou.

SCALES.—The Ringold Company has begun work a the Jones and Grant ground above T. Lewis' meb. They have a good prospect for a rich claim.

BRANDY CITY.—The water season being about over the B. C. mine are running powder drift and preparing for winter.

Wey Mitt.—The Mercer & Celinas Quarts Company, Josephan The Mercer & Celinas Quarts Company, Josephan Gworks at the besd of Migger carcommenced the work of putting up a to-stamp mill bact Monday morning. About 50 men are employed. S. M. Wilcox is general manager. The ledge runs from three to five feet in width and prospects about 58 at the company.

ing in the courts are decided, a move will probably be made to true as new tunnel, the necessity of which is apparent, as the upper levels are pretty well worked out,

Top lode.

Slerra.

THE CLEVELAND MINE.—Sierra Tvibuns, Sept.

S. Fifteen hundred dollars worth of bullion was brought down from the Cleveland mine Wednesday evening as the result of so days run with as stamps, evening as the result of so days run with as stamps.

The mill will remain "hung up" for the present, owing to a searcity of water. All but two hands were discharged. As soon as the cases now pend-

San Diego.

A MINING BOOM.—Plumas Metional, Sept. 3: While we are unable to chronicle any particular boom in town lots or farming lands in Plumas, we can safely say that a veritable mining boom has reached us. The mining outlook was never better. More purchasers, more developments and more prospecting is being done at the present time than prospecting is being done at the present time than for years before, and the boom has just statied.

The HALLSTEP MUNE is in a fait way of being the present time than the present time than the present time than the present time that the present time time the present time time th

great drawback is the sosircity of water to run the mills.

GOLDEN FLEECE.—Shasts Courier, Sept. 3d: doseph Decker, the old prospector and successful miner, is again on deck, with health restored, after a sledwess. He is now paying his particular attent as deckness. He is now paying his particular attent and esthetically maned district known as Jackass of mammoth extent, being on an average 3s feet in the bases. The ore easely splenduly, and the ledge is the edge of good way width. The mest and spring Creek is down on the ledge, one 48 feet and one 63 feet deep.

Free Gold—The shaft on the Dunn Brothers' width. They prospecting shafts and spring to good pay free gold quartz and sulphurets. The snaft has been gold quartz and sulphurets. The snaft has been gold quartz and sulphurets. The snaft has been cury for early want. Beauder & Co. have struck the shaft a drift will now be run on the ledge.

Whisk yrow,—The miners here are beginning to order to keep the water our. From the bourom of cury for early rains. Beauder & Co. have struck the some fine lobeing rock in their mine on Grizzly way up." Reed is driving absed in the Mad Ox immer, that vicinfy, and reports his mine looking.

"way up." Reed is driving absed in the Mad Ox Surde And and a surface of the struck of the shaft with CON, CALIFORNIA MD VIRGINIA.—Enterpriss, Sept. 3: On the the tool evel wires. Wo. 1 still continues to show good ore, and all the breasts where the tatol evel wires. Wo. 1 still continues to show good ore, and all the breasts where preparatory to the mining of ore on a grand scale is being done on the 1900, 1400, 1453, 1500, 150

### Washoe District.

MEVADA.

a new shaft.

Lower Springs Mines.—Cor. Republican Free Press, Sept. I. There have been many efforts made in on of gold from our ores. So far, they have shall complete without shall completed stillure. The Kempton works are at a standing of gold from our ores. So far, they have all ton of gold from our ores. So far, they have shall completed stillure. The Kempton works are at a standing of standing shall completed stillure any prospect of its broing fit be done with these works for the benefit of the camp and them these works for the hoped that these parties will stand to be hoped that these parties will stand be should be supposed their milits and settle their sectionly to make the standing out bricks of gold that will compare favortusing out bricks of gold that will once the favortusing out bricks of gold that will once the favortusing out bricks of gold that will once the favortusing out bricks of gold that will once the favortusing out bricks of gold that will be gold that the favortusing out bricks of gold that will be some favortusing out bricks. The favortusing out bricks of gold that will be said for the favortusing out bricks of the Squaw creek mines. One favortusing out bricks of the Squaw creek mines.

MINE SOLD.—Union-Democrat, Sept. 3: The Solumbia, was sold this week to T. B., Valentine of San Francisco. The agreement for sale was put on record Wednesday, agood being paid at the time of sale, the emainder of the purchase money to come from the output of the mine. The purchaser will immediately erect a teen will immediately erect a second procession.

SEGREGATED BELCHER.—Good headway is making in the drift on the 1300 level. A partition is being half of the produce a circulation of sir.

BELCHER.—Are still drifting on the 500 and 600 levels to tap the ore bodies found in the Crown Point.

Esmeralda District. ALPHA, —Are still drifting on the 122 and 222 LADY WASHINGTON.—Are still drifting north along the footwall on the 725 level.

BALTHWORE.—The usual quantity of ore is still coming from the 400 level.

OPHIR,—No. 1 winze on the 1300 level is now down 112 feet, and is showing fair grade ore.
POTOSI.—The usual prospecting work is in progress on the 300 and 400 levels.

TOO Jevel, have the Imperial shaft on the Yellow Jacker,—Are rapidly pushing the drift.

Exchequer,—On the res level the east crosscut continues in vein porphyry of a promising appear-ance,

out one on the 1150 level. Kapid progress 1s masking with the mill.

UTARH.—Retimbering the main north lateral drift on the syze level, and driving weat crosscut the sear crosscut.

Same, This crosscut was started at a point 68 feet of the syze level, and driving weat crosscut.

SERRA NEVADA.—On the 320 level east crosscut.

LRYALAR.—On the main north lateral drift of the started from the main north lateral drift of the started from the main north lateral drift control lateral control on them progresses.

MEXICAN.—On the 1300 level from the end of the joint was advanced 70 feet; to lest of the joint Mexican and Ophir east crosscut a north fare joint Mexican and Ophir east crosscut a northern progresses.

MEXICAN.—On the 1300 level from the end of drift was advanced 20 feet; total length in Mexican on the ground, 97 feet; total length in Mexican COCIDENTAL.—The usual work is doing on the ground, 97 feet.

SCORPION.—On the 300 level from the end of the cond of word of the ground since from the progresses.

SCORPION.—On the 300 level the is out point.

SCORPION.—On the 300 level the ground since from the and the scot to the colon feet of the ground since from port.

SEGREATED BELCHER.—Good beat drift is out port.

SEGREATED BELCHER.—Good beat as fast research of the ground since last rechange in the character of the ground since last rechange in the drift on the zoo level. A partition is perpendent.

was extended 16 feet. Its face is in quartz of low was extended 16 feet. Its face is in quartz of low the early level the routines in free frade. This sadvanced 18 feet and continues in free of 5 feet. This south driff on this level is in quartz of 16 was advanced 18 feet and continues in free of 5 feet. The south driff on this level is in quartz of a poor grade. The car samples from this level is in quartz of a poor grade. The car samples from this level is in quartz arange from \$45.0 t.50.0 t.0. About yo tons of ore page of the continues to lower. It be body of ore developed in the northwest drift on the 450 level, Sharon or of the good milling ore. Rapid progress and repairing the main incline from the bottom of the continues to look well. It will yield a large amount of good milling ore. Rapid progress and repairing the main incline from the bottom of the fold Chollat.

COULD AND CURRY.—The north drift on the electrical large land and progress and popphy and elevanche of each include the main count drift on the yoo level, and doreness ore. Work on the electrical large amount of good bead.

COULD AND CURRY.—The north drift on the 485 level is still being advanced in a mixture of quartz mad purply of a koverble character. Cood bead west drift is being advanced in a mixture of quartz way is making in the roopening and timbering of drifting the west crossout (No. s) on the 800 level for including the west crossout (No. s) on the 800 level and points of the south drift of the Savage drifting the west orsecut (No. s) on the 800 level for infinite, on this level, before crossouth, and shows a mixture of quartz benafing the west orsecut (No. s) on the 800 level for in the considerable flow of water. On the yoo level fartil being the still the south drift on the 300 level for in the considerable flow of water. On the yoo level is still being extended as mixture of quartz benafing the west of the form the order of the flows on the constant (No. s) going west on the footwall of the vein. The Good poor devel from the o

will not be callfornia stamp and pan-mines to more in the coalitornia stamp and pan-mines to more in the coalitornia stamp and pan-mines to morth in the one body from the face of Mo. reast it continues in reed grade. All the material taken from the drift is paying ore. All the material taken from the drift is paying ore. The drift pass the material taken from the drift is paying ore. The drift is paying ore, and the mines in continue in reed for the drift is paying ore. The drift is paying or it is drift in a market in the drift is paying or it is drift in the drift is paying or it is drift in the drift is paying or it is drift in the drift is paying or it is drift in the drift is a grade in the drift is paying or it is drift in the drift is a drift in the drift in the drift i

hevels, Aurora Darneralda District.

Aurora. Walker Lake Bulkstiva, Sept. 1: The promise of Aurora improves, and at no time has been greater probability of a return of the old there been greater probability of a return of the old time passes and the propertity. No change that is appreciable has markenene to the cold time passes and the control of the cold time passes and the control of the cold of the control of the cold of the control of the cold of the col

Ploche District.

So fonten, and contents of the contents of the

Contact, 9 tons; Wide West, 2 tons; Dandenberg, 20 tons, and Leonie, 20 tons.

TOMBSTONE DISTRICT.—Epiloph, Sept. 3: A trip over the district during the past week, contribe over the district during the maining outlook was never brighter, so far as developments were concerned, although the war on silver being made in the East continued to have a depressing effect. Work on the various properties of the Grand Central Co.

### Union District.

few days.

Commonwealth...During the past week main
Gommonwealth...During the past week main
glaft has been sunk to feet. A vein of fine ore was
out extending down nine feet, three feet of which is
light-grade ore, Assays show from \$185 to \$718 per
ton, 15 per cent of which is gold. Much higher can
ton, 15 per cent of which is gold. Much higher can
is low grade. A station is now being opened.

Xgo-foot level has been advanced so feet, encounterthe May Queen vein. On the soo-foot level, No. 2
the May Queen vein. On the soo-foot level, No. 2
the May Queen vein. On the soo-foot level, No. 2
the footthe May Queen vein. On the soo-foot level, no the
the face, similar to that encountered and the soo-foot level, no the
mation is changing, seams of clay and spat crossing
the face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 crossthe face, similar to that encountered in No. 2 cross-

MORTH BELLE ISLE.—There is no notable change except in Mo. a there is a slight seepage of water. Mo. 3 whice on the too-foot level continues in ore. Fair progress has been made with all other work on this level. Will start the stopes on this level in a few days.

BOOVE the 700-1001 level.

GRAND PRIZE.—The 300-foot north lateral drift, extended 14 feet, The ven is small. Work has been started on the company's milt, which will be put in running order as quickly as possible.

MAYAD.—A drift has been started south from the shaft, on the main croscout east from the shaft, on the west vein, a 530-foot level, and has been extended to level, is being repaired, and new track laid prepartlevel, is being repaired, and new track laid prepartlevel. The prepartlevel is the drift to the south end of the work of the strending the drift to the south end of the Worth Metal I. The form of the south of the Worth Metal I. The south of the south of the work of the south of the

DIANA.—Times-Kenten, Sept. 2: Croscent east, 150-foot level of Morth Belle Isle, has been extended a total distance of 186 feet.
FOUND TREASURE.—The cap rock, which is hard, beet passed through and the blue porphyty, which breake well and requires but little powder, concountered. Some good ore is being taken out an above the roof-foot level.

GRAND PRIEE.—The goo-foot north lateral drift,

### Tuecarora District.

SALE.—Pelmont Cuoire, Sept. 22. J. O. F. Wilke informs as the is negotiating with Mew Wilke informs as the ties as easy of the seale of the Se. George mine situated in Sea Antonio district, Mye county. This unite was formerly known as the General Lee. Mr. Wilke says that a shalt has been sunk on this property, at the bottom of which the ledge is from four ciny effect in width. This ledge carries gold and silver one which averages about 500 to the ton. The ore is strength in start for three forms with the same arrange his affairs in San Antonio, for the purpose of completing the sale.

San Antonio District.

CHONDAGA.—Picobe Mecord, Sept. 3: The Onondage mine is still improving. In the bottom of the wines countered, and the wines targe theorys of ore were encountered, severaging one to two tons each. The strike was unsequenced to two tons each. The strike was unsequenced to two tons each in the coupeny and left to one side, the interestion of the company and left to one side, the interestion of the wince to being to tun a drift from the bottom of the constructs assert in through the present of the wines to be the present of the wines of the mine are indefatigable workers, the wholes drop on to a bonance ere long, and will, we hope, drop on to a bonance ere long.

continues with unabated vigor; the usual amount of ore is being sent to the mill, which is kept constant-ore is being sent to the mill, which is kept constant-ore is and sold and as at a basit is being sunk. The Silver Thread, and an air abalt is being sunk. The and other property of this great company are being and other property of this great company are being and other property of this great company are being and other property of the great company are being theorem and other property at the old workings, and there and other buildings at the old workings, and there is a busy hum of activity on workings, and there is a busy hum of activity on the control of the property is being the current and the control of the c

TWELVE THOUSAND DOLLARS,—Bellevue Hevrald, Sept. 3: The Casie City mine, Slaughler-house guich, not over two miles from Bellevue, and owned by James and Wm. McWade, was sold yesterday to the Granite Monntsin M., Co. of Montana for

George Taylor has been beer the past few months in the interest of an Eastern company, organized by work, Aug. 30: work the beds of More, Elk, Grimes and Granite the creeks. If the right of way bill passes Congress as the coming session, work will begin next sesson. This will be one of the largest mining enterprises in Idaho, and will raped that the expenditures accessary to consider and will raped that the expenditures accessary to work under full headway, constitute secusions, will be cone of the largest mining to expenditure secessary to work under full large and to the fune to expenditure secessary to work under full headway, constitut secrification work under full large and show the full work under full large and show the full work under full sand sover. There work under to get fall sufficient to work the work under full sand sover. The full man and the full sand sover the full full proposed to the full full worked in early days are millions, and show full as the best of the ground was not once and Elk creeks, is onstituted the full full worked, and such dass to more, and the full sand sher working two and three the full full worked. A great would now be considered the high prices of those days making it unprofitable to work fast more once, and then only half worked. A bedrock flume once, and then only half worked. A bedrock flume once, and then only half worked, and much of it is found as not once, and then only half worked. A bedrock flume once, and then only half worked been adduct rights here. Everything may be the deem and the question against but here after and after working two and three there and sher the passage of the ball, will have been agenc privileges in regard to dump that bares deem only half worked. A bedrock flume after and after the passage of the ball, will have the been agenc privileges in regard to dump that bares deem of the passage of the ball, will have the been agenc privileges in regard to dump that bares always.

Twenty Private the regard to dump that bare always as anne privile

COLORADO.

HARSHAW.—Recent advices from the Patagonias report mining matters in Harshaw and Washington from a price as prices, and chloriders wear being made to the ameters, and chloriders wear many lees.

BISBER.—The Copper Queen smelters shut down the first of the week on account of bad roads and lack of coke, but started up again on Friday with two stacks. This is one of the best copper properities in the world, and keeps two years' supply of one constantly in sight.

MARSHAW.—Becent addiese from the Patsennise

TRUE BLUE,—A rich strike is reported in the ne Blue, owned by A. H. Stebbins.

Olastely,

OMEGO.—The main shaft is down 100 feet, where a station is being cut out, in opening which a vein a station is being cut out, in opening which a vein station is being cut out, in opening which a vein MANHLE.—Bumor has it that the lessees of this property her got of 5500 per week per mau.

MANHLOWER.—The lessees of this property have got into a good body of rich ore, and are making it pay.

every hand.

OLD GUARD.—Work on this property is being every hand.

OLD GUARD.—Work on this property is being adjorously procedured. Three shifts are eaglested in white the receipt of the to-stamp mill which is defined to the contract of the co-stamp mill which is warrant the erection of the to-stamp mill which is contract the certain of the to-stamp mill which is contract or the completion of the different buildings by the tast of October, and it is believed that by Notice For the completion of the different buildings by the tast of October, and it is believed that by Notice For the completion of the different buildings were not the completion of the production of buildings by Notice For the completion of the production of building to the moder way.

LUCKY CUSS.—It has long been known that a large body of good grade ore exists in this, one of large body of good grade ore exists in this, one of the mobilion be well the most of the Tombstone Milliam of the cauthor to admind the stamp of the cauthor of the monitoring the most works will be effected, the work to be windered distiller.

# WATER CANON.—Sonoma Bullion, Sept. 7: The Georgia Bell is pushing work and increasing in the output which is being shipped to Scoorro for reduction, The Three bowman is increased in the special particles and quantity of ore too rapid to comment upon. The Jace bowman is increased in the statement upon. The sace bowman is increased comment upon. The sace bowman is increased comment upon. The sace bowman is increased comment upon. The sace upor workings but comment upon. The sace upor workings but more galena and an against a fall of the character of the ore is the same as the upper workings but more galena and an entitly different lead. A new more galena and an entitly different lead. A new morth which will semines to persistion sometime exit company will commence operation sometime exit to differ the compinues the morth which will simulate business in camp to a secence of sculve work. There task of the resumption of work in the Meritti mine. A large vein of noth in the Meritti mine. A large vein of production of Socorro county will be greater this per result in the Meritti mine. A large with the Sat. A large body of sand carbonates had native silver thas made its appearance in the Star of production of Socorro county will be greater this per result in the same interest of the same server seen. It is the chart of the same of the carbonates in the Star of the sawas ever seen. It is the chart of the say gold brick as was ever seen. It exhibited as pretty a gold brick as was ever seen. It exhibited as pretty a gold brick as was ever seen. It was the carapings from the place of the search seen. It NEM MEXICO.

reteke. The troot clade mine from whiten one was cannot series and being and shapped to Buttle for fluxing purposes, is not being worked now, as the partners cannot series.

Juvide District.—Buttle Inter-Mountain, Sept. 2: Augard Mueller, who is interested in the Divide District in the United Series.

Line at work, and are running two tunnels to almost every day. The Apex Con, Mining Co. has almost every day. The Apex Con, Mining Co. has almost every day. The Apex Con, Mining Co. has almost every day. The Apex Con, Mining Co. has almost every day. The Apex Con, Mining Co. has almost every day. The Apex Con, Mining Co. has almost every day. The Apex Con, Mining Co. has almost every day. The series of a bond for stoon enen at a strike the lead on the Franklutt, and has an advantage of the force every coon. Mining the series of a bond for stoon one of the Constitution has now been interested there are confident that it will soon come interested there are confident that it will soon come interested there are confident that it will soon come interested there are confident that it will soon come of the force of LEADVILLE'S DEVELOPRIENT.—Denver Tribune-well-known mining editor of Leadville, was in the coll Leadville, was in the coll Leadville, was in the coll of Leadville, was in the coll of Leadville, was in the coll collection. Several good before the miner in that region. Several good strikes have falsely been made, and new ground is strikes have lately been made, and new ground is surface have lately been made, and new ground is surface have lately been made, and new ground is more than suspected. It is evident that the tent of ore-besting country is much larger than ease strike in the groupsect or be winch larger than based on the most sangine eastlet relit of ore-besting country is much larger than even the most sangine eastlet be much larger than even the most larger to be surfaced out the confidence of iron, which had been supposed to be well nigh worked out. Mr. Clint koudebush, who has been supposed to be well nigh worked out the prosperty under lease, and shipping considerable quantities of iron, which had been morking the order ton, has struck some fine one; and of the Lee, in which had some the core; one of the Lee, in which the same amender the one, and of the Lee, in which the same one the one; and veloped country. Leadville will crowd the \$15.000, which had been supposed to be world. And there is no one; and veloped country. Leadville will crowd the \$15.000 which had been supposed to the sadding the north end had been supposed to the sample one; and other mining camp in the sonial margin of production this year, which will not be make the condition improve in the considerable mining in the sonial margin in the past. It bids fair to become more of a world's wonder than it has been.

ANACONDA,—Review, Sept. 1: News in mining cucles about Anaconda, the pass month, base been decles about Anaconda, the pass month, base been cucles about Anaconda, the pass month, base been west the formation of the Montans Hire Briefs and Fire Clay Co. The company is now working a shipment of lour tons to the Boston and Montans and State made as a larger scale, a small force of men the list mice, and alsa week made a shipment of lour tons to the Boston and Montans and State scale, and lour tons to the Boston and Montans to the district west of Anaconda was a larger scale, should be district west of Anaconda was made last seture, by William Dix and Chris Keenan, in their the district west of Anaconda, sac as larger scale, about 15 miles west of Anaconda, and it is located to mile cable road. At a depth of 16 becet they struck a chimney of carbonates. They brought a seasy \$200 the vein to Anaconda, and it from the Cable road. At a depth of 16 becet they struck a chimney of carbonates on Foster sembles the trapper carbonates and seven miles from the Cable road. At a depth of 16 becet they struck a chimney of the vein to Anaconda, and it dient from the Cable road. At a depth of 16 becet they seem the Cable road. At a depth of 16 becet they seem in aliver. The Constant of the vein to Anaconda, and it staken this specimen of the vein to Anaconda, and it discussed from Mooces creek, and will now go to work developing their valuable properties on Foster oreek. The Iron Clad mine from which ore was a faken this spring and shipped to Butte for wat purposes, is not being worked now, as the partners are spring a spring and shipped to Butte for fluxing purposes, is not being worked now, as the partners and the partners are supplied to Butte for interested in the Divide.

ANARE CREEK DISTRUCT.—Park Kecord, Sept. 3: Stacke Creek Distruct.—Park Kecord, Sept. 3: Stacke Creek distruct and all that part of the great mineral-beating zone couth and were of the Ontario on the eve of making at a size period and on a small distruct while begun at a size period and on a small distruct while begun at a size period and on a small distruct while begun at a size period and on a small distruct while begun at a size period and on a small carring record. The developments in that intantile and the capitalists alike, Everything that nature in the veins will equal any in camp, as could developing the mines; and wood, water, and heavy times; and wood, water, second dever, and the population of the wood water and classing of considerable activity, and the form the pick will have a record established as a leading district in order. The Revision of the week and the former in order, at the former and the considerable and the Revelley and after the pick water and the former, and a turnel recently and are being developed by turnel by Bower, Axtell. The Plymouth, just abower and and peace well in ore, a total of story Bay, as a bline of story turnel by tur

much of it.

WILL RESUME OPERATIONS.—Albina Construction of it.

Wo news of more gratifying interest has been received of late than the decision of the Oregon Iron ceived of late than the decision of the Oregon Iron and Steel Company to settle all difficulties and been and steel Company to settle all difficulties and be and steel company to settle all difficulties and be and the workes at Owego will soon be in operation on a more extensive scale than ever before. The convexet of supplying pipe to the city of Portland to water mains has been let to the company, and to water mains has been let to the company, and the water mains has complete plant for manufacturing the new furnace will be finished at once and steam power used in its operation. Several hundred men will be employed and Oswego resume its former power used in its operation. Several hundred men will be employed and Oswego resume its former position as one of the livelicat of Albina's auburbs.

OUNDARY. — Jacksonville Times, Sept. 2: The COLARTY. — Jacksonville Times, Sept. 2: The prospecting in questre is now going on in this county, i. B. Hutch and others of Grant's Fass are engaged in prospecting a point in the State of Crant's Fass are engaged with the county of the prospecting a point of the county of the co

### OREGON.

The conditions of the sale are \$5000 cash

The conditions of the sale are \$5000 cash

The conditions of the sale are \$5000 cash

The cash payment was made yesterday, ye, to develop the men will be put to work on the superson that the sale before the second payment.

SATE CITY Mittee was located Ang. 30. The standard of the month as possible before a fall becade on the west side of Shughter.

As one type of the second payment.

In the sale of the second payment.

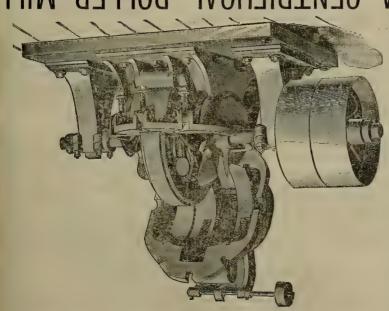
SATE CITY Mittee was located Ang. 30. The standard of the month of the sale went in the road payment.

SATE CITY Mittee was located Ang. 30. The should be second payment.

SATE CITY Mittee was located Ang. 30. In the first half of the mone or two bolders, while very more than the road and the sale went in the road and the sale went in the road and the sale was a standard to the sale went in the road and the sale will be development in the road sale and carried with promising results.

It and development work is going on in the road of the claimant bave gone way the sale will be sale will be sale with the sale will be sale and sale will be sale will

### **EEISBEE-LUCOP** CHILL



ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of smalgamation may be applied.

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh dry, and from 3000 to 6000 pounds Wet.

All wearing parts easily and obeaply replaced. May be seen in operation at the New York Metallurgical Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, furnished on application.

THE FRISBEE-LUCOP MILL CO.

Office, 145 Broadway, cor. Liberty St.,

American Exchange Hotel, HOOKER & LAWRENCE, Gen'l Agents.



CHAS. & WM. MONTGOMERY, Prop're.

### BY AUG. J. BOWIE, JR. Practical Treatise on Hydraulic Mining.

struction of Dichois, Flumes, Phpes, Flow of Warder deep the Leavy Chades, methods of mining shallow and deep pleaser, history and development of mines, records of mines, records of mines, not as accessing methods of the Mardy-Eurdys, rockers, undercurrents, etc.; also described methods of bleaffigt, thundes and shootes described more than the manual deep company; duty of miners include and a processing the manual manu

### CONTRACTORS, ATTENTION !

D the bundred feet or more. Duffling Machinery on face, portlying Machinery on face, inquire of more feet or feet or feet or feet inquire of WALLERS OF CHILDS.

WALTER C. CHILDS, Glencoe, Calaverse Co., Cor., or of GLLESPY & CHILDS, 138 Chilornia St., San Francisco.

### San Francisco Cordage Factory.

Established 1856.

Constantly on hand a full assortment of Manila Rope, Sias Rope, Tarred Manila Rope, Hay Rope, Whale Line, etc., etc.

Extra sizes and lengthe made to order on short notice

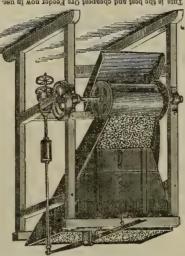
TUBBS & GO.

611 and 613 Front St., San Franc

This peper is printed with Ink Manufac-tured by Charles Eneu Johnson & Co., 500 South 10th St., Philadelphie. Branch Offi-cee. 47 Bose St., New York, and 40 La Salle St., Chicago. Agent for the Pacific Cosst-Joseph H. Dorety, 529 Commercial St., B.,

### THE ROLLER ORE FEEDER

[Patented May 28, 1882.]



r repairs. sra, never having deen out of order or costing a dollar repairs.

Golden State and Miners' Iron Works. Sole Manufacturers, 537 First Street, San Francisco, Cal

YNATMOO WAS N. W. SPAULDING

CIRCULAR 1881 82 ADM CHISEL BIT Inserted Tooth SPAULDING'S

Of all kinds made to order. Send for Descriptive Cata-logue, 17 and 19 Fremont St., San Francisco. GAW MILLS AND MACHINERY

SMBS

GREGORY &

San Francisco, Cal.

Cor. Fremont and Mission Sts.,

HOLLOWAY FIRE EXTINGUISH-

BRADLEY CUSHIONED HAMMERS, SCHLENKER'S STEAM HAMMERS, SCHLENKER'S BOLT CUTTERS, SCHLENKER'S BOLT

BEVINDED MITTING WECHINES SHIMER MATCHER HEADS.

STURTEVAUT BLOWERS AND EXHAUSTS.

BLAKE'S IMPROVED STEAM

BEMENT & SON'S MACHINISTS

MACHINERY, WOODWORFING

PERIN BAND SAW BLADES. WEBBER CENTRIFUGAL PUMPS.

IMPORTERS AND DEALERS IN ALL CLASES OF

# AIHJAM

SOLE AGENTS FOR

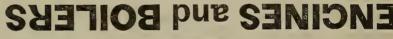
SOUTAL ENGINES.
PAYNES VERTICAL AUD HORIencines. Milliamson bros' hoisting

10DZON ENGINE CONERNORS' SICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY,

NATHAN AND DREYFUS OILERS AND MACHINERY, WHEELS

TVNE VND BODIEK SVM WIFTS ING CO'S EUBBER GOODS. DISSTON'S CIRCULAR SAWS.

YACHT ENGINES. H. W. JOHNS, ASESTOS PACK-

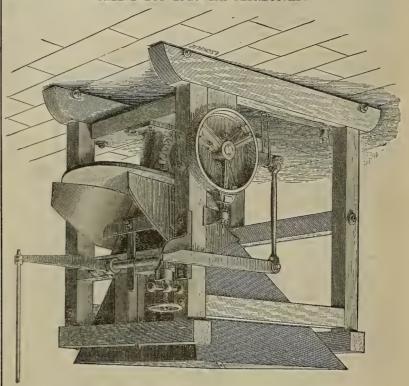


FROM 2 TO 100 H. P., ALWAYS IN STOCK

SUPPLIES AND LUBRICATING

### **102HOV HENDX WYCHINE MOBKS**

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



"CHALLENGE" IMPROVED ORE FEEDER.

The est form of Feeder ever devised, and pronounced by reputable mining men to be far superior to any form of "Roller" Feeder manufactured. We refer to the following gentlemen who have furnished us with testimonial letters to the shore effect, which can be seen at our office, viz.:

N. W. CROCKER, Supt. Bunker Hill Gold Min.

D. C. WICKHAM, Taylor Mine, Greenwood, Clip, Cal.

T. R. Trecklam, Taylor Mine, Greenwood, Cal.

W. G. ROBERTS, Greenwood, El Dorado Co., Cal.

L. C. WICKHAM, Taylor Mine, Greenwood, El Dorado Co., Cal.

Mine Co., Amador City, Cal.

The Co., Amador City, Cal.

In Co., Amador City, Cal.

W. G. ROBERTS, Greenwood, El Dorado Co., Cal.

"In Co., Amador City, Cal.

In Co., Amador City, Cal.

"Greenwood, El Dorado Co., Cal."

"In Co., Amador City, Cal.

"And many others, and we are prepared to furnish either the

"Challer and many others, and we are prepared to furnish either the "OHALLENGE" IMPROVED ORE FEEDER.

And will furnish descriptive Catalogues and copies of Testimn, and mill furnish description quote prices upon application,

### Metallurgy and Ores.

### SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurete.

BLUESTONE, .... MANUTAOTURERS OF ....

LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GIVSSANGEE VAD SAADHIES' ELC CHEMICYT VELVEVIAS VAD CHEMICYTS' DERIC

114-118 Fine Street, - San Francisco
We would call the attention of Assayers, Chemists
Mining Companies, Milling Companies, Froquectors, etc.
to our tull stock of Enkances, Furnaces, Mullies, Cruci
bles, Soorifiers, etc., including, also, a full stock o
Chemicals.

pplication.

F. Out Gold and Silvet Tables, showing the value per unoc Troy at ulfacture degrees of flacueses, and value bless to the computation of assays in grains and grammes. Also for the cupon application. Agents for the briefer in grains and grammes. Describe, and full weight of Miss off-Rowen manufacturer are thoroughly callable, and full weight of Silvet guaranteed. Orders also manufacturer are thoroughly off the soft of the s

### NO. 28 STEVENSON STREET, Nevada Metallurgical Works.

Mear First and Market Streets, S. F.

Ores worked by any Process.

Orea Sampled,

Ores Sampred.
Assaying in all its Branches, Waters, etc.
Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications furnished for the most suitable Process for Working Ores.
Special attention paid to Examinations
Special attentions and Special contractions.

Mines; Plans and Reports furnished.

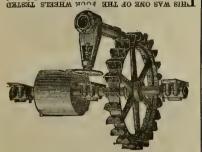
O. A. LUCKHARDT & OO.,
(Formorly Hubn & Luckhardt, )
Mining Engineers and Metallurgists.

S18 Fine 3t. (Basement,, Corner of Leidesdorff Street, \* - BAN FRANCISCO METALLURGICAL WORKS.

Assaying and Analysis of Ores, Minorals and Watere.
Minos Examined and Reported on.
Practical Instruction given Treating Ores by im
roved processes.

G. KUSTEL & CO., Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL.



THIS WAS ONE OF THE FOUR WHEELS TESTED

A by the Idaho Company as Gress Valley, Cal., and
Mroulars and guaranteed estimates.

I. A. PELITON, Neveda Olty, Cal.
AGRIESPARE & LACY, SI and 28 Framoub Street
San Francisco, Cal.

INVENTORS, TAKE NOTICE!

258 Market St., M. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin copper and brass, L. PETERSON, MODEL MAKER,

> QUARTZ MILL. Hantington Centrifugal

SEND FOR CATALOGUE.

JIGS and TROMMELS.

NACHINERY, CORNISH ROLLS, CORNISH ROLLS, CAR

**ENCINES AND BOILERS.** 

FRASER & CHALMERS

ing smelting works This Mill as a Crusher and Pul-verizer is without rival. Le in operation in lead-STURTEVANT MILL.

silim bas

**BOMPING** MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

BUGINES

WACHINERY,

CORNISH

, 29 M U 9

NEW YORK OFFICE:
Room 48, No. 3 Wall Street. GENERAL OFFICE AND WORKS:
Fulton and Union Streets, Ohicego, III.

UTAH OFFICE-SALT LAKE CITY, UTAH. MEXICO OFFICE: No. 11 Calle de Juarez, Ohlbushus, Mexico.



# COLD

# Quartz, Gravel and Placer Mines!

**SMALGAMATING** 

HYAE BEOAED THE WORT ECONOMICAL AND SUCCESSFUL

WINEBS

FRASER & CHALMERS, General Agents, Obicago, III., and Denver, Col

1 YMEZ LEFFEL & CO.,

JAMES LEFFEL'S

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

Fifteen Medal<mark>s Awar</mark>ded

or 110 Liberty St., New York.

TRAMWAYS,

ENCINES'

WIRE ROPE

HALLIDIE'S

BNITZIOH

Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

GES and 655 MISSION ST., SAN FRANCISCO, OAL.

MOTICE.-My Silver-Plated Plates are well known and used everywhere. They have proved superior to all others in durability and weight of Silver.

### THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. **WORKING TESTS OF ORES BY ALL PROCESSES.** COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

> ETC., ETC. ASSAYERS, CHEMISTS, MINERALOGISTS, MINERS, IMPORTANT TO METALLURGISTS,

We have just compiled a very complete List of Recent and Standard Works on the above subjects, which we will apply.

Also a key Catalogue of Books on Ricetto-Metallurgy, Also and Work Listoffene of Books on Ricetto-Metallurgy, Monthly Hills, Fattern-Jaking and Metal Working, Would will be sent tree upon application.

Control of the sent tree of Practical and Science applied to the whole of the sent tree, and tree of postage, to any one in any part of the world who will furnish his address.

HENDRY CARBEL SKIELD & GO.

HENRY CAREY BAIRD & CO.,

Industrial Publishers, Booksellers, and Importers,

810 Walnut St., Philadelphia, Pa., U. S. A.

### Heavy Drilling Operations.

The New York Graphic of recent date has en-Work on the Aqueduct at New York,

Ingerseld diville are used in the choose provided and diviled are used in the control portion:

Smith & Brown, contractors for the control bars self usersold lates all that part of the work extending from lave all that part of the work extending from shelf 10 to 11 B inclusive, equipped with lates and no others, sold drills and air compressors and no others, sold drills and 12 B under McLoughlin & Bestly, a comprising 175 drills and 18 B under McLoughlin & Bestly, and the supersold drills. Shaft 19, 8 Ingersoll drills. Shaft 19, 8 Ingersoll drills. Blatt 18, 2 to 24 inclusive; Blatt 19, 6 Ingersoll drills. Shaft 20 to 24 inclusive; Ingersoll drills. Shaft 20 to 24 inclusive; Ingersoll drills. Shaft 20 to 24 inclusive; and Peterson & Co., who have all that part of the Peterson & Co., who have all that part of the nained riverson of the control drills and air compressors exclusively. Sold in number, and the control drills and air compressors exclusively. Sold in the same of the number of the control of the control drills and air compressors exclusively. Sold in the same of the number of the control of

### SHAREHOLDERS' DIRECTORY, MINING

	-			~										
					*1	SIN	SHME	HS	SA					
JOURNAL	S. F.	ABHTO	CIMA 8	PRESE	SOTRATIPIO	CTA.A.	MINING	NI	STNHMHAI	ADVERT	FROM .	THURSDAY	RVRRY	омъния

1	7 dq98	Con California & Va M Co Nevada A W Havens
3	OFFICE IN S. F. AMOUNT, PAYABLE	NAME OF COMPANY, LOCATION, SECRETARY.
ı	THIN THREE MONTHS.	
	Of aged	North Occident M Co Nevada W H Watson
Į		Mono M Co California. C. W Sessions
3	I 22 4q98leunaA	Belle Isle M Co, Wevada, J W Pew
	OFFICE IN S. F. MEETING DATE.	MAME OF COMPANY. LOCATION. SECRETARY.
1	TO BE HELD.	MEETINGS 7
۱	Aug 30 Sept 17. D Buck 309 Montgomery 3t	Venus M Co 25 25 25 July 27
ı	I I S VIOROZIONI RUG	Utan Con S M Co., Nevada., z., Zo. Aug 10.,
1	Sept 38 Oct 19.1 georgian m Buffington 369 Miller alt Good and Book and Boo	South Comstock Con M CoNevada., 2., 10. Aug 22 Trojan M Co, Nevada., 16., 10. Aug 22
1		San Francisco Copper M Co. Cautornia., 1., 44. July 15 South Comstock Con M Co Nevada., 2., 10 Aug 29
ļ	Sept 21 Oct 11. H. L Parker 309 Mon gomery St	Sierra Mevada M Co Nevada Merada 25. Aug 18.
3	Sept 30Oct 20 Ellintt359 Montgomery Bt   18	Potosi M Co Nevada 28. 50 Aug 22
)	Sept 15 Oct 6. J J Scoville 309 Montgary St	Phil Sheridan Con M Co Nevada. 2. 10. Aug 13
Ţ		Overman S M Co Nevada53. 25 28. Aug 27
,	48 TEmograph 606 84 Holmes A. E 450 81 4498	Ophir S M Co Mevada53 50Aug 10
	48 signoidad elb , at bleitbate t. et des es gua	Orleans Con M Co Nevada 2 03July 15
,	48 ani T 68 30. If H. Luty 18 3uA	Original Key-tone S M Co Meyada 8 10 July 21
[		Maydower G.M. Co
ŗ	Oct 5 Oct 24 Crockett327 Pine Be	Locomotive M Co Arizona. 2. 50. Sept 1
3	3 48 airrollis Oct 419 California St 1 300 8 300	Justice M Co Nevada. 45. 30. Sept 2
í	Sept 19Oct 10, T Wetzel 522 Montgomery St	Gray Eagle M Co Calitornia., 3., 01Aug 15
4		Exchequer M Co Nevada. 24. 20 uly 6
1	12 San Fi E Luty 1008 S. H. A. B. Luty 1008 100 100 100 100 100 100 100 100 10	Con Pacific M CoNevada4. 24 20. July 6
	Oc. 10 Oct 27 O L AcCoy 329 Pine St	Con Imperial M Co Mevada. 24. 25 Sept 6
1	Sept 29 Oct 18., C E Elliott 309 Montgomery St	Chollst M Co Co. 25. 25. S. Aug ZZ.
		Best & Belcher M Co Nevada, 36, 50, Aug 25, Champion M Co California, 26, 6, 10, Aug 26
	A Sept 30 Sept 21 L Osborn 309 Montgomery 3t, 15. yes one 2d of the property 3t 3t. 3t. 3t. 3t. 3t. 3t. 3t. 3t.	
2	Sept 8 Sept 29. D M Kent 330 Pine St	Buker Divide M Co California. 14 25. Aug 2
	Sept 16 Oct 14. G W Sessions 309 Montgomery St	Bodie Con M Co California
	dept 15 Oct 32, H. Grayson dept 12	Bullion M Co., Aug. 33, 50. Aug 12.
1		Alpha Gon M Co
1		Start Active M. Co. 101.00.01 Special Active M. Co. 10.00.01 Special Active M. Co. 101.00.01 Special Active M. Co. 101.00 Specia
		COMPANY. LOUATION, NO. AM'T, LEVIED
ı	CITATION COLUMN TO THE PROPERTY OF THE PARTY	

### S. F. Stock Exchange. Table of Lowest and Highest Sales in

Our FRIENDS can do much in aid of our paper and the sause of practical knowledge and science, by assisting
Our Agents.
300 Oroeker
00 Condition 1. 10 000 Corpus 0. 2. 50 000 Toroino 0. 050
50 Confidence \$ 255 Sierra Nevada3.90
350 Chollar
TOO DESIGNATION OF STATE OF ST
400 Bullion of Language 1 20 Mexican and the second of the
08.9.   rolls sigh   0871   r881   8 Jug Radeau HT   008   005   28.2   safe   008   28.4   safe   008   sa
Sales at San Francisco Stock Exchange.
The second secon
100 Com 3.10 3.452.75 3.202.10 3.0 2.75 3.20 1.0 3.0 1.20 1.20 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.5
100  21  25 2[   44epibory
and the second s
98avre 98
Silver Star
82, 8 62, 100, 8 63, 810, 9 6 00, 8 180409 09, I 82, I82, I 01, I88, I 02, I 31, I 1 8811 10, 1891 88, 87, 87, 83, 8811 10, 1899
00.8
North G. & O. 162. 8 35 10 3 35 1.50 2.50 Leading State of E. 100 2.50 2.50
North Belle Isle 9 9 75 75 98 7.50 84 91 Belle Isle
Merhain Belle
Aa.r   88,194,1   01,196,1   08,188,1   08,1   08,1   08,1   08,2   08,4   08,4   08,2   08,4   08
09 09. 68. 09. 63. 07. 09 deg W ghad
07 08. 00. 01.1 07. 02.1 01.1
01.4 37.5 32.4 00.5 00.4 01.4 05.5 00.2 stand & bind of the original of t
Exchequer1.45 1,551.15 1.45 .90 1 201,10 1.30
Nafbud. Maraka Cou 6.75 7.00 7.25 8.00 Eureka Cou 6.75 7.00 7.25 8.00
06, 06, 06, 61, 00.1 66, 00.1 06, (11,10.0)
Oor, Pacific,, 15, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20
00.7   0.7   57   0.8   0.0   752.7   10.7   67   0.8   0.0   752.7   10.7   67   0.8   0.0   752.7   10.7   0.5
00.28   00.28   0.28
05, 1 85, 65, 90, 90, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1
Col.
20, 19, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10
Second   S
1   1   2   2   2   2   2   2   2   2
Palchon         62         7.75, 5.00         2.50         2.60         4.60         5.00         2.00
March   Marc
1   1   2   2   2   2   2   2   2   2
Make OF   Make
Apple   Appl
1800   Monkromety Se.   100   1800
### APPLINT THEFTH MONTHERS   28   28   28   28   28   28   28   2
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
September   Sept
Action   A

### Sales at San Francisco Stock Exchange.

09.9	Тенож Таскег	022	940 Gould & Curry4.40@44
0g.I	Utah	100	10 Exchequer 1.35
08.8	Union Con	049	300 Отоекет
pcu,	TRIOIT	ብብች	50 Challengs 2.50
ocg	Scorpion	20	to Con, imperial, of
06.6	Sierra Mevada	997	50 Confidence
21	AND SEVEN	ngz.	Sco Crown Point. S. 50 Crown Point. 50 Confidence.
ogt	Potosi	007	150 Bodie 175@173
00 3	Potogi	097	350 Chollar 350 Chollar
5008	Feet	nc	150 Bodie 60
62.2	Uccidental	O.C.	DOD DOTTE TRIE
υ <del>ի</del> . <u>፲</u>	Ophir	001	400 Bullion (7.20 500 Bullion (6.407) 500 Bullion (6.107) 501 101 Bullion (6.107)
ŧ	Ophir	099	100 Baltimore95c
OG.₽,	Mev. Queen	320	500 Belcher64@7
d8.£	Mexican	019	400 Bullion 1.20
ane	Justice	001	scores, a relicion, in 1910 is a to the
ock	Juliagilu C	09	SI.I sebnA 022
25c	Lowa	000	800 Andes. 2.35 220 Andes. 2.35 400 B. & Belcher 3.35
0£.4.30	Hale & Nor	0921	THURSDAY Sept. 8, 1887. 800 Alts. 2.35 811

Our Agents.

Our Perrybe and our paper and the sause of practice, by assisting the more in tail of oid or paper and solves of practiced knowledge and solvenes, by assisting theore, we intend to send anounsering favors. We intend to send none due workly men.

Jakep C. Hone—California.

Ore. MoDowert—Sente Clere Co.

J. W. J. Ferrym.—Neveds.

Whintan Pool.—Fresno Co.

Whintan Pool.—Fresno Co.

E. Sarrym.—Mensel Co.

E. Sarrym.—Served (Co.

White Modowert (Montens.)

E. Parrym.—Served (Co.

White Modowert (Montens.)

E. Sarrym.—Served (Co.

Suna Proper (College Co.)

Suna Proper (College Co.)

Suna Proper (College Co.)

Suna Proper (College Co.)

### New Incorporations.

MAME OF COMPANY.

Con California & Yea M Co.

Do bee Bine Gravel M Co.

Eurales Con M Co.

Furdade Vully M Co.

Sussel Reduction & M Co.

Sussel Reduction & M Co.

The following companies have been incorranged, and papers filed in the office of the Superior Court, Department 10, Sapt. Schools.

American Projecture Co., Sapt. Schools.

ject, to sell an invention of S. D. Smolianioff for a new and improved explosive and processe. Directors—for charging abells and torpedoses, Directors—fold, H. H. Scheier, John W. Carter and Edd, H. H. Scheier, John W. Carter and South Occidental stock—\$1,000,000.

E. M. Greenway, C., Nev. Capital stock—\$1,000,000.

Jircolory, Co., Nev. Capital stock—\$1,000,000.

South Occidental H. M. Levy, Morris Hoeflick, Inch. Schools.

E. M. Greenway, Caorge Searle and Chas. W. Figh.

Hudson Manutracturing Go., Sept. 7th.

Object, to manufacture mustard and spices.
Capital stock—\$60,000. Directors—H. C. Hudson, Lea. D. Owens, A. E. Shattuck, E. C. Bartlett and H. R. Williams, Jr.
Merchants' Ior Cold Barorage and Capital stock—\$100,000. Directors—J. W. Moyle, A. P. Baron, L. B. Coleman, W. Moyle, A. P. Baron, L. B. Coleman, W. Capital stock—

Con, L. B. Coleman, W. G. Anderson and F. D. Teller.

RUBY MINING CO., Sapt. 7th. Capital stock
—S1,000,000. Directors—A. W. Craig, J. L.
Mosher, W. F. Tikes, W. E. Bainbridge, J. R.
Little and M. T. McPherson.
Anterioral Bank and Trust Co. Capital
stock—S500,000. Directors, E. B. Mastick,
Abner Doble, James A. Waymire, T. H. Down.
ing, J. W. Farren, S. P. Lout and O. E. Moore.

### New York Metal Market.

Telegraphic advices dated Sept. 8.h give the following we York prices:

suce at \$23.05.

Prices generally ruling for metals not regularly dealf in on oall at the M. Exchange, covering extremes of buyors and sellers views. All prompts delivery. Australia, 28.06.08.25. Billion 17m, \$28.06.24.00.3 boltond Chron Copper, \$3.76.0... Copper, \$3.76.00.00.

Oktord Copper, \$3.76.0... S. C. Copper, \$40.000.00.00.25.

Poreign Lead, \$3.46.04.70. Poreign Speiter, 10.25. Poreign Speiter, \$4.6.00.00.00.25.

### San Francisco Metal Market.

-			0	90	τ	٠	*		b	9.0		9	5.5	a	۰		•		•	0.9	۰	9 1	8	P	4	6.1		**	٠	•	A	ME.	ĵα	ľ	8	¥	81	ΒĽ	À.		ı	
-			<b>@</b>	00	OF	•		×	• 1		۰	9.4		۰	•			٠	•		38	98	31	U	91	u:	1	Δę	T-	_	Œ	ਭ.	Δ'	IJ	E 6	32	IC	)I	ñ	'n	ı	ı
97			(3)	94	9	۰	* *		٠	• •	۰	۰	0.1	•	۰	۰	•	• •	٠	• •	۰	۰	1	•	٠	•	٠.			•	٠.	• •	11	BC	)(	)J	В	q:	O.	_	ı	ı
09	ı	9	<b>D</b>	92	ē	٠	• •	•	•	• •	•	•		•	۰	•		۰	*		۰	**		٠	•	2	9	٠.,	93	HC	C	3-	-5	IJ	K	V	T	IN	I	J.	ı	
\$1			Ø	0E	-	۰		1	٠	• •	1	h	9	•	. 6	h		6 6	۰	• 0	۰			a	•		8	4 1		٠.	õ	o	25	,	K	) [C	8	8	V	-	1	i
9			0	F			**		٠.	0 0	0	9 1	2	E	9			9	•	0 =	9	0 1			8 1	0 b	6				•	8	Te	U	K	प	3	eī	AÏ		ł	ı
9			0	Ŧ.		٠			in 1	= 0		٩	•	. 10	۰			4	1			2 1		×	• 1				۰			• •		• •				ρį,			1	
-			04	8	-	*			41	0 1	4	• 1	۰	9	2	×	8	9:	2	18	8	ù	В	u	п	DJ	IC	۰ (	pı	u (	οτ	m	BI	a	n	H	21	BT:	न		ł	
97	1		0	9T		٠	4 4	×	81	1.0	٠	0 1	•	٠		×		۰	1	٠		• •	*	٨			٩	TF	٦,	II S	31	18	u.	ř	_	÷	T	13	ũ	8	ł	
			0	62	8	-			434			3.5	ю		3	×		٠	• •		•		۰	۰		۰	9		۰	٠.	18	01	ø	1		ЭΤ	Τī	u	O		I	a
•	٠		0	00	ž				1		٠	h	٥	٠	*	٠	1 5		٠	ė.	0			4	8.1			٠,	٠	• •	8	B	à.	œ.	K	Ŕ	G	n	ă		ł	
_			(D)	08	ř	-5	jε	g	6	æ.	4	ī	3:	u	T			2	'n	3 C	u	'n	١c	ď	T (	9	9	ักา	12	lυ	rn	10	28	ï	ò	6	10	Ų	Ŕ		1	
			0	8	•	٠	• •		В			b			ŧ				٠		٥	å	ź	٠				(0)	ð				4		3	16	98	u	ŝ		Ī	
09	1	9	(D)	Ç	G		٠.		۰	٠.	۰	٠		٠.	٠	٠	٠	٠.				٠			٠	٠.		**		٠.	٠.	٠.				H	3	81	ã		1	ĕ
-	9	٦,	00)	00	ē.				٠	* *		٠			ä		4 1	٠	u	4 +	٠		×	٠				* 6	٠		4	٠.	B	ı.a	r-		C	rv	â	n	ı	ı
_			(0)	00	Ğ,																																			•	ł	
-			00)	20	22	į.			4			ı	2 4		ø	۰	• 1	. 0	9			'n.	9.5		•			Į,	п	п	AA	è	ìΠ	R	'n	9	ć.	CL	õ		1	ı
08	)	22	(D)	00	Ta	÷			'n		1	۰			h	٠	٠		4			٩							H	בר	Ü	ar	x	1	i	o s	36	J	ň		ı	
Or		Úξ	(a)	_	67,	•		4	٠			0	ŧ				0		٠	4	074	n:	1	41	1	'n	H	T	402	10	25		11	RET	7.	IC	1	Ш	Š.		l	
05		67	(a)	-		۰			n			٠	9 1		۰	9	9.1		ı		п		ŧ,	á	a		£	٠,	e.	, L	rô	'n	42	ic	'n	17	17	9	Š		ľ	
09		7.5	(a)	_			9 0		٠			۰			'n	۰	٠.						ä	π	n	a	39	96	) T	T.T	92	នាំ	TA	Ta	ล้	_		40	Ϋ́	TR.	ı	ı
13			(0)	61		٠	٠	٠.						٠	٠				٠		٠			ï		7.	Ę.	.8	าะ	32	TT	C	v	61	á	a	a.	11	a a	1	١	
8				FZE		٠			٠	٠.		٠			٠	۰	٠.				٠	4 4		٠	٠.				В		В	2	ň		ä	30	25	iii	Ť		ł	
_	1		8	6T																																					i	
13			Ď	6E			• •		а	• •		٨			٠	۵			٠	٠.	٠	٠		٠	8	٠.		• •						٠,	'n	2	31	OS	ä		ı	
-	1		_																																				ò	2	ı	
FG			@	g		۰	•		٠	٠.	•	۰	•		٠	٠		٠	٠		٠	•	8	٠		٠.	٠	٠.	٠	٠.	٠	• 6	15	oá	31	31	п	17	7		ı	
8			0				ш		٠			٠	3	8	я	8		9	۰	10		В	D	К	π	L	13	TI.	(a	a	T.	πŧ	36	-	45	X	v	31	01	g	ı	
-		ā	1	96		1	8									1	. ,			6		. 3	18	2	2	T	IC	E	91	LH		-7	X	76	)	W	I	L	N	F	1	ä
	20	RR	T	8	de	36	4	0	δ.	V	α	6	B	Ω	E	F	T							í	_					1		ı	ı			ı	ì			*	1	ı
	-			-		ı										ľ																									1	

Inventors. List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific States.

FOR WEEK ENDING AUGUST 30, 1887. From the official report of U. S. Patents in DEWBY & Co.'s Patent Office Library, 220 Market St., S. F.

969, of t.—Pte Holder—D. H. Lathan, Davis-299, обт.—Алимы Stock—D. H. Lathan, Davis-6, 1,31 69,060, HAY RAKE-J. H. Johnson, Traver, 369,000.— TRUNK AND BUREAU – Kaile W. Enback, Rotherlord, Cal. 369,255.— Reversuler Sash Window—De Guere & Delano, S. F., Cal. 360,055.—Wire Rope Maring Machine—A. 360,055.—Wire Rope Maring Machine—A. 260,055.—Mire Rope Maring Machine—A. Cal.

369,250.—Lubricator—A, D. Kilborn, Oak-land, Cal,

369.064.—WHIFFLETREE GUARD—L. A. Lasher, Изра, Саl. 369,015.-WHIP-E. B. Knapp, San Jacinto,

vapa, Cal. 369,119. HAND WEEDER—H. W. McNeal, Ferndale, Cal. Perdele, Cal. WEEDER—H. W. McNeal, Pendele, Cal. W. I.

369 301.—PAINT—Geo. W. Swan, S. E. 369 302.—PAINT—Geo. W. Swan, S. E. 369 365.—OLL CUP—W. H. Thomas, 1969, 366.—CATARRH REMEDY—W. H. Thomas' Los Angeles, Cal.

Morra.—Copies of U. S. and Foveign patents furnished by Iewey & Co., in the shortest are consistent of the converse time possible (by mail or felegraphic order). Amorican and Foreign patents of obtained, and general patent business for Facilia Coa it inventors transacted with portect security, at reasonable rates, and in the shortest possible time.

### Notices of Recent Patents.

Motiogs of Recent Patents.

Mowey & Co,'s Sourwrive Presss U. S. and Worthy of special mention:

Foreign Patent Agency, the following sre worthy of special mention:

HAY RAKE.—John H. Johnson, Traver, Thiare Co. No. 369,060. Dated Aug. 30

1887. This is a new improvement in hay rakes, the object of which is to hold the operating the rake down upon the ground, no matter how the travel of the operating the rake down upon the ground, no matter how the travel of the operating the rake down upon the ground, no matter how the seavy the load may be.

Sewer Gas-Traps.—John Tilton, S. F. No. 369,1987. This in
Betwer Gas-Traps.—John Tilton, S. F. No. 369,1989. Dated Aug. 30

Reserve the load may be.

No. 366,3793. Dated Aug. 23, 1887. This in
between sinks on topopera incommencation the second of the contion relates to an improved gene-trap which they communicate. It consists of a cap or floating properly guided within a chamber and closing, appring, said doat being proverly where water with which they communicate. It consists of a cap or floating, by which it is beolyancy or the action of a spring, said doat being proverly when the consists of a cap or floating.

Numal Stock.—D. H. Kathan, Davisville, Day which it has being proverly said doat being browned as the object of the sections, with united and the desired.

Yolo combety, No. 369,1661, Dated Aug. 3, 1887.

Yolo combety, No. 369,1661, Dated Aug. 3, 1887.

Young it may be extended sither longituding tone them. It consists of a base or support formed in sections, with united and the day of the consulty in the bring time of a series of posts fixed on the movable sections, between which animals of difficult in any be extended sections. When the same hay be lead with his bring to securing the sections which are any or the sections, when the same and a complexity of the sections which are sections. When the sections we have the section when the sections were the sections where the sections were the sections where the sections were success at some to the sections wh

### Bullion Shipments.

Me quote shipments aime our last, and promoted and shall control of the control o

### Testing and Working Silver Ores

in illustrated work of 114 pages, for minors atom, by. Chas. H. Asron. Mr. Asron has y

Price, post free, \$2.00. Sold by DEWEY & Co., Publish-9, 220 Market St.

Patent Agency: Dewey & Co.'s Scientific Press



Home Agency over all others, by resents here and presents many and important advantages as a season of long death and a season of long establishment, great experience, thorough aya intentions in our own community, and out most extensive law and relevence library, our most extensive law and relevence library, on the sinus official American and foreign reported files of secentific and mechanical publications, from our Agency will have the observed through our Agency will have the observed through the season of secentific and mechanical publications. Patents in all countries of the season of the seas

### ASSESSMENT NOTICE.

South Comstock Consolidated Silver Min-

resurrence, Assistant and the state of the s

otherd Trowning Set Post St. E. F. F. Set Sort St. E. F. F. F. Set Sort St. E. F. F. Set Sort St. E. F. F. Set Sort St. E. F. Set Sort St. E. F. Set Sort St. E. Set Sort St

This paper is printed with ink Manuface.
This paper is printed ultipate and to Co., 500
South 10th 5t., printed plants. Brach Offices of Yourk, and 40 is all 6 see-47 Rose 5t., New York, and 40 is all 6 st., Oblosgo. Agent for the Peoffic Coest-to Coest-t



### ELECTRIC DEVELOPMENT COMPANY.

ethgid oirtoelff orA & tneozebnasonI

Electric Motors, Dynamos, Trancars, Elevators, Signals and all kinds of Electrical Systems for lighting and amission of power, either direct or with storage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

### THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

GIVAL BOWDER OF DYNAMITE,

GELATIUE-DYNAMITE, Stronger than Dynamite and even Saler in Handling.

OBEL'S EXPLOSIVE GELATIUE, Which contains 84 per cont Saler in Handling.

10DSON BOWDER IMPROVED.

BANDMANN, NIELSEN & CO.,

C. A. STETEFELDT, President.

THE RUSSELL PROCESS COMP'Y.

FOR Sale by all druggists,

No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

### ("DYNAMITE" or "GIAUT") **NILHO-CILACEHINE**

Blasting Powders.

Vigorit "LOW" Powder,

FOR REMOVING STUMPS AND TREES HAS NO EQUAL.

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager.

### M'S'KEILH'

MOTORS, LAMPS Keith's Electric Dynamos,

Electric Railways, and Apparatus for the Electric Transmission of Power. Storage Batteries.

Cactory, 11 Stevenson St. San Francisco, Cal.

### HOLEL, AMERICAN EXCHANGE

319 & 321 Sansome 51., San Francisco.

The above well-known hotel offers superior scannon define the oity, common the persentes withing the top trade and the persent within the file to dozer the file to dozer the persent of the file to dozer the control of the persent o

Free Coach to and from the Hotel. CHAS. & WM. MONTGOMERY, Prop'rs RATES-\$1.00, \$1.25 and \$1.50 per day

CHORTHAND taught thoroughly by mail. Send S. 167 circular. MISS BARREIT, 100ms 7 and 8, 240 NEW TORK OFFICE, 18 BROADWAY

defined by the state of of the state of the

### Mining Spare Market.

### Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, berms of subgreeted to examine its contents, berms of sud, and give it their own patronage, and, so making its value more videly journal, and making its value more videly thrown to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

### Don't Fail to Write.

"De man wot knows it all is alluz a-makin' bange, a-buyin' ob experience." The man who does such tinkt hat he "knows it all" about Pumpe gan find out a great deal about them in (NAMMALW.) PUMP CATECHISM, By mail, postpaid, \$t. Dewey & Co., szo Market St., S. F., Cal.

### Books on Working Ores.

BY Guido Kustel, M. E.

brocesses and wherefore. It conceans a thoresees are supplementable of turners cappelled by the property of turners of great nearly. It is a work of great nearly. The process putation is unsurpassed in his special processes free along by Dwwer & Co., Ft. 252 Market St., Sen. Sold by Dwwer & Co., Ft. 252 Market St., St. H. AARON.

BY C. H. AARON.

### Iron and Machine Works.

### CALIFORNIA MACHINE WORKS,

WM H. BIRCH & CO., ENGINEERS AND MACHINISTS, SUBJECT OF STREETS AND MACHINISTS, STREETS OF STREETS

Steam Engines, Flour Mill, and Machines Machines Dredging Machines

ELEVATORS. Brodle Rock Crushers,
Steam Power, Hydraulic,
Side Walk and Hand-Pow
ELEVATORS.

Manulacturers of B. E. Henrickson's Patent Automatic afety Catches for Elevators. All kinds of machinory and repaired.

### SACRAMENTO, CAL. **UNION IBON WORKS**,

ROOT, NEILSON & CO.,

Engines, Boilers, Steam

Flouring Mills, Say Mills and Quartz Mills Machinery constructed, fitted up and repaired. Front St., bet. N & O Sts., Sacramento, Oal. MACHINERY FOR MINING PURPOSES.

### Golden State & Miners Iron Works.

Marufacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

STEVEUSON'S PATENT

RIOTAMAĐJAMA b1808-bioM

Golden State Pressure Blowers.

First St., between Howard & Folsom, Sts.

THOMPSON BROTHERS,

### ENKEKA FOUNDRY

23 and 181 Beale St., between Mission and Howard, S.

MANUPACTURERS OF CASTINGS OF SVERT DESCRIPTION.

MANUE'RS OF GENERAL MACHINERY.
Works, No. 315 Mission 8t., 32n Francisco.
Special aftention given to Woodworking Machinery,
Steam and Gas Engines. Correspondence solicited.

MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

Address " Busmess Box A," office of this paper, San MINING EXPERT AND GEOLOGIST.

**BOZZ E BROMNE**'

Mining and Hydraulic Engineer,

NO. 307 SANSOME ST., SAN FRANCISCO.

### The Techno-Chemical Receipt Book

THE TECHWO-CHREY BEADTA.

THE TECHWO-CHREY BEACHET BOOK—Containing Several Thousand Lecchies, containing Several Thousand Lecchies, containing the Labest, and the Laborates of NOW READY.

sio Walnut St., Philadelphia, Pa., U. S. A. HENEZ CAREY BAIRD & CO.



BACK Firse of the Mignes And Scientric Press (un-art (two volumes) \$5. Inserted in Dewey's patent bind-,, 60 cents additional per volume. dinc, Copper or Br ss Screens for all purposes. Call.

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Chartest, San Francisco, Cal.

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Froducts.

Have correspondents in all the chief cities of the United States, Europe, Australia, India, China and the principal and the Principal States and Sulphur Company. Agents of the Principal Capata for the Parish Charteres and Capata and Capata

GRO. W. Dioris, Manager. J. О.В. Спии, Seoretary. H. T. Scorr, Vice-Pres and Treas. General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Massa

BOILDERS OF --

Location of Works, Potrero. P. O. Box 2128.

Pump

Office, 216 Market St., S. F.

IRVING M. SCOTT, Gen'l Manager.

GEO. W. PRESCOTT, President.

STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed. Agents of the Cameron Steam

Ваву Ноізта, Укитільгіне Раиз, VERTICAL ENGINES,

RETORIS, ETC., ETC. PULLEYS, SHAFTING, HORIZONTAL ENGINES, COMPOUND CONDENSING ENGINES, SWARFING Serr-Feeders, Pock Breakes, SETTLERS, ENV.

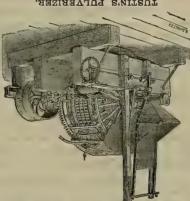
NNION IBON MOBKE TRY OUR MAKE, CHEAPEST AND BEST IN USE.

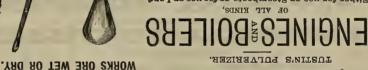
SEND FOR LATE CIROULARS. SHOUR TO PRESCOTT, SCOTT & CO.

HINCKLEY, SPIERS & HAYES, Proprietors.

Office, 920 Fremont St., SAN Francisco [ESTABLISHED IN 1855.]

MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or Compound, Stern or Side-wheel Engines,





Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

Tanks for Salmon Canneries.

Canks for Salmon Canneries.

Boiler Repairs Promptly attended to and at very monerate rates.

Acams we rus receive coast vor rus.

Agreement of the salm Punner.

Special results of the salm Punner.

SPECIALTES:

Corlies Engines and Tustin Ore Pulverizers.

DEAUE STEAM PUMP.

Reents and Manufacturers of the Liewellyn Feed Water Purifier and Heater

### MILL PACIFIC ROLLING

True to pattern and superior in strength, toughness and durability to Cast or Wrought

True to pattern and superior in any position or for any service. UP TO 20,000 LBS, WEIGHT,

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

SUPERIOR TO IRON FOR

Tasitavluq a'nitenT

MISCELILANEOUS MACHINERY.—Flour Mil Machinery, Saw Mill Engines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Wheels.

Crushing, Amalgamating Pans, Settl rs, Furnaces, Ro-torts, Concentrators, Ore Freders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc.

MINING MACHINERY.—Hoisting Engines and Works, Cages, Ore Buckets, Ore Cars, Fumping Engines and Pumps, Alwater Buckets, Pump Columns, Alv Com-

pressors, Air Receivers, Air Pipes,

MILL MACHINERY.—Batteries for Dry or Wet

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL, ALSO Steaf Rods, from \$ to \$ inch dismeter and Flats from I to \$ inch. Angles, Tees, Chemels and other abset Vagon, Burgzy, and Truck Tives, 190w Steaf, Machinery and Speals Shapes and invoke and inch state of the party of the state of the

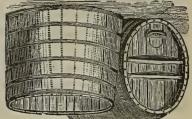
evan liw stabio Tave

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

Meducine and Only Grands REPRESENTATION REPORTS AT SHIP, MINING, and WATER TANKS a Specialty. The VIL KINDS OF CASKS, TANKS, Etc. FULDA BROS., Proprietors,

MACUETIC ELASTIC TRUSS CO., SO4 NORTH SIXTH STREET ST. LOUIS, MO., SO4 SACWENTO ST., SAW PRANCISCO. CAT.

San Francisco SO to 40 Spear St. CALIFORNIA WINE COOPERAGE CO.



Office, 43 DEY ST., NEW YORK Clayton Air Compressor Works,

For CATALOGUES, ESTIMATES, Etc., Address

And General Mining Machinery

ROCK DRILLS, AIR COMPRESSORS,

CLAYTON

Catalogue No.5, Jan I, 1887

AND MAILED FREE ON APPLICATION, **NZL IZZNEDI** 

San Francisco Pioneer Screen Works.

For Flour and Rice Mills, Grain Separators, Revolving and Stofe Mills, Grain Separators, and Sofe and all discount of the complete and Milling Machinery. Iron, Skeel, Copper, Brass, Zinc and Milling Machinery of the colebrated Slot Cut Inventey and Slot Punched Screens, or burred and Slot Punched Screens. Or burred and slot Punched Screens. Mining Screens a specialty, from No. 1 to 16 (fine), Mining Streens a specialty, from No. 1 to 16 (fine), Orders promptly strended to.

PERFORATED SHEET METAL

We imitation, no deception, no planished ov rotten tron used. Only genuine Russis fron in Quartz Screens. Planished thon secence as nearly held my former rafes. I have a large supply of Battery Screens on hand suitable for the Huntington and all Stamp Mills, which I

BATTERY SCREENS.

GREAT REDUCTION!

SAN FRANCISCO, OAL,

8 California St., and 21 Fremont St.

PARKE & LACY

REPRESENTED BY

INCERSOLL ROCK DRILL CO.

For Catalogues, Estimates, Etc. addre

THIED EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM KOBK

VAD EULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIOUS

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in ENGINEERS, CONTRACTORS,

WINING WEN

NOTICE TO

23M ETABCISCO

221 & 223 First St., San Francis JOHN W. QUICK, Proprietor



00'1\$

(\$212.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE MOW IN USE. Concentrations are clean from the first working. The wear and

Got, Sam Francisco.

The Montrare Company (Limited), Loudon, October 8, 1885.

Dear Sires:—Having tosted three of your Free Vanners in a competitive trai with other similar machines umply, we have estimated three of the superiority of your family.

THE MONTANA COMPANY (Limited).

THE MONTANA COMPANY (Limited).

N. B.—Since the above was written the SO Vanners having been started gave such satisfaction that 44 additions the company have been purchased.

Protected by pressed May 4, 1860; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; February 20, 1888; September 18, 1888. Patents applied for,

Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OR VANNING MACHINE, CONCENTRATOR OBE **THE FRUE** 

# PRICE FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the colebrated "Triumfr" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the beat manner; their frames being of iron, insures their solidity, durability, and perfect traces being of iron, insures their solidity, durability, and perfect durie less freight space in boxes, by which their cost of transportation is reduced, and occupy less mill room when set up.

An important improvement has recently been introduced and smalgam bowl. The improvement is in the reciprosal motion which is incoment has recently been introduced and smalgam bowl. The improvement is in the reciprosal motion which is incoment as discharge from the feed and smalgam bowl. The improvement is in the reciprosal motion which is imparted to this table by the longitudinal motion of the shaking frame to which the table is at a cashed. We have at band many testimonials, from well-known Superintendents of mines in different mining districts of the United States, hearing evidence of the efficiency and superiority of this form of Concentrator, and we shall be pleased to send Ofronlars covering such letters of testimony, and, as well, directions for setting up and operating frame for granting to quote special prices for any considerable order.

Meaning value and sterested by the officiency and superiority of this form of Concentrator, and we shall be pleased to send Ofronlars covering such letters of testimony, and, as well, directions for setting up and operating the many periods and any are ready to quote special prices for any considerable order.

NOTICE TO GOLD MINERS! Mos. 89 to 51 Fremont St., "TRIUMPH" ORE CONCENTRATOR. 10SHOV HENDY MACHINE WORKS, HHL

vacing the separate of the season of the power of the season of the seas

521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

San Francisco, Cal.

Assayers' and Mining Material,

HADEO-CARBON ASSAY FURNACES Agent for HOSKINS' BATTERY SCREEUS AND WIRE CLOTH

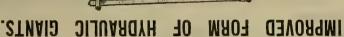
No. 108 FIRST STREET.

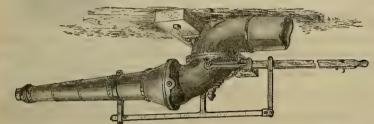
GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FURNISHED ON APPLICATION.

FRANCISCO NOVELTY AND PLATING WORKS

MADE OF BEST SOFT LAKE SUPERIOR COPPER

COLD





The above cut illustrates the INPROVED FORM OF HYDRAULIC GIANTS, which we range at a lilustrates the first from the force, a Mismilar styles are infringements upon this form, and s judgments stands of record to each of include Court in the matter of Hendy and Fisher vs. k. Hoskin se also decision of the decision of the stands of the sta

JOSHUA HENDY MACHINE WORKS, 38 to 51 Framont St., San Francisco, Cal.





TNHTAT

### Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

and Salivation,

The most perfect appliance for people engaged in Yorkinne, Cannon, Yorkin, Dry Caraling, Ganach, Workel, Ortokreilrer, Mines, Lead Octroding, Threshmer and Perfect and Freshmer, and Stock-driving, and coording and similar work, they are independent, as no foreign substances, and similar work, they are independent as no foreign and similar work, they are independent, as no foreign substances and it may be perfect and perfect the first state of the perfect of perfect and it not entired to have a sold subject to approve the state of the first state of the perfect of perfect and it not extended the perfect of perfect and it not extended the perfect of perfect and it not extended the perfect of perfect and perfect of perfect and perfect of perfect and perfe

send for Descriptive Circulars containing Testi-onials of well-known parties who are at present using JOHN TAYLOR & CO., Sole Agents, 114 to 118 Fine St, San Francisco

> MACHINE, HYDBAULIC IMPROVED

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

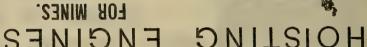
FOR SAVING

ter capacity and more scally worked and of the factors of Mr. Hendy that a keyles are infringed. I when y the scall when y the scall when y the scall we have the scall when the scall we have a scall when the scall we have the scall when the scall when the scall we have scall when the scall when the scall we have scall when the scall when the scall when the scall when the scall we have scall when the scall when the scale wh

ENCINES DISTING

MAZ

IN QUARTZ, GRAVEL, OR PLACER MINES.



HAND SOLLY BY THE Motion or Pat, Improved Friction. 1, 2, or 4 Drums, with Reversible Link

LIDGERWOOD M'F'G COMPANY,

PACIFIC COAST AGENTS, 96 Liberty St., New York.

SAN FRANCISCO. PARKE, LACY & CO.

IRON CASTINGS of all descriptions CHILLED MHEETS CAR

AND RAILROAD CASTINGS.

MEDAL AWARDED, MECHANICS' FAIR.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. TAS, W. KERE.

San Francisco: 127 first Street.

PORTLAND, OREGON.

SALT LAKE CITY, UTAH.



ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and Iron Working Machinery

SEND LOH CIHCULARS

A NEW AND RADICAL DEPARTURE IN **BOILER. NOTJEZA** 

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

CHINER, adpived to all grades of ores and SuPOSSIBLE PRICES, where the property of any other manies, where are also prepared to Construction and DETHER in Complete Files, and SuWorker, additionally manually as the LOWER,
We are also prepared to Constructor and DEWorker, and the property of the EEND LOH CIHCUF The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

MINING MACHINERY,

RANKIN, BRAYTON & CO.

I. R. MEAD, Secretary. R. S. MOORE, Superintendent, WM. H. TAYLOR, President.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

ECONOMA' DURABILITY,

San Francisco, Cal.

.ean ni won 1ewer now in use. AND FACILITY OF INSPECTION and REPAIRS.

Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Jute Mills, and other places.

Guaranteed More Efficient than any other Boiler made.

MITSON'S PATENT GAS-PRODUCER.

STEAM BOILERS of all descriptions

SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarifiers, Double Effects, etc.

SUGAR MACHINES—Steam Yearly Witness and Boilers, Seraw Propellers, Centrifugal Fumps, Steam Capstans, Gargo Winness, Steam Capstans, Gargo Mill for the Alacka Mill and Mining Company,

Mining Company.

BOILER

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces of all binds.

AIR COMPRESCORS—Rope Power Transmission.

AIR COMPRESCORS—Rope Power Transmission.

WEOUGHT-IROF WAYER PIPE a Specialty. More.—Have just completed order for 35 miles of 44-inch pipe of 1-inch incompleted which and the signification of all binds.

SAW—MILL MACHINER OF AIR Williams.

SAM—MILL MACHINER OF AIR Williams.

SAM—MILL MACHINER OF AIR WILLS.

SOLE MANUFACTURERS for Pacific Coage of the Celebrated "Heine" Patent Safety Boiler (Water Tube); 69,000 horse, power now in use.

60,000 horse, power now in use.

WATER TUBE

Manufacturers and Sole Agents for the Pacific Coast for

MACHETER PATENT STREEL-RIM PULLEYS—Fifty per cent lighter and 25 per cent cheaper than cast-tron pulleys; will not break in transportection.

F. A. HUNTINGTON,

окк сказнкк

MACHINERY

Centrifugal Roller MANUFACTURER OF

Steam Engines and Shingle Machines. Mining Machinery of Every Description,

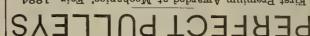
CONCENTRATORS AND ORE CRUSHERS,

SAN FRANCISCO, CAL.

WINING

NO. 45 FREMONT STREET, -

Centrifugal Roller Quartz Mill.



First Premium Awarded at Mechanics' Fair, 1884.

Sole Licensed Manufacturers of the

For the States of Childernia, Oregon and Nevada, and the Territories of Idaho, Washington Montans, Wyoming, Usah and Arisona. Lightest, Strongest, Cheapest and Best Balanced Pul. sy in the World. Also Manufacturers of SHAFTING, HANGERS AND APPURTENANCES.

SHAFTING, HANGERS AND PRICE LIST. S. SAND STREET STREE Medart Patent Wrought Rim Pulley

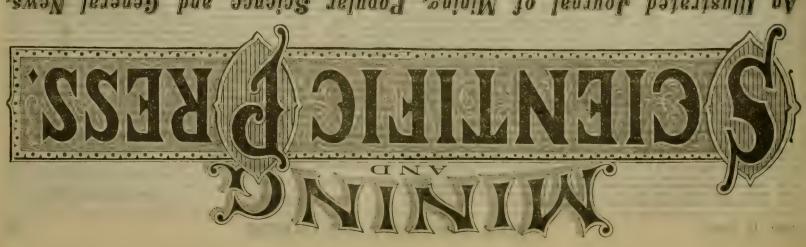
Nos. 129 & 121 Fremont Street,

Sent Francisco, Cel SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco.

GENERAL MACHINE WORK, ARCHITECTURAL IRON WORK,

Ice and Refrigerating Machines, Shafting, Pulleys, etc.

SLEVM ENGINES'



Publishers. Illustrated Journal of Mining, Popular Science and General News,

We give on this page an engaraing of a patent Calico District. Farmer's Steam Generator.

teanim to quoug tool ang extract from his description of the Blackthe silver mines of Calico, we make the follow In continuation of Mr. Lindgren's paper on

east of the Garfield, on the other side of the canyon. Shortly after oressing the latter the This sim a Had tuods betautis ai quorg sid?

triot. It is not certain whether there is a con-nection or not between this and the Garfield in the same direction as the others of the disat Fig. 1 of the accompanying out, will show that the fissure strikes and dips approximately A glance at the map previously published, and Here again we find a fissure vein in connec-tion with several irregular surface deposits canyon itself is eroded on a line of dislocation. of reddish tula, dipping gently in the same di-rection. There is probably a fault between the Garfield and the Blackfoot, and possibly the an area of greenish decomposed tufa-beds dip-ping sontheast, which again, further east from the Blacktoot, are capped with heavy benches massive liparite ceases, and we come again into

nothing except a jaspery gangue was encoun poor to work. The fissure was followed down for some distance below the ore-shoot, but At 75 feet, vertical depth, the ore became too wall; and they extend along the fissure for a distance of 300 to 400 feet. No barite is found. wide, sending out stringers in the hangingare sometimes irregular, often six to ten inches bonate of lead | lie mostly in the hanging-wall of the smooth and striated fault plane; they fault. The deposits (ceargyrite with some car-

have no apparent connection with fissures. Aside from the main direction, they are quite follow approximately the dip of the tufa, and The other deposits, of which there are three,

Coar continues very stiff and several grades have been further advanced during the week, strike, from being M. E.-S. W., swings around to M.-S., some of the strata dip E., others S.-S. E. The beds being so beavy, there is con-siderable difficulty in deciphering the structure. logic structure of the heavy tufa beds is some-what complicated. There appears to be a bend of the strata near the Blackfoot, where the figure there is some ore impregnating the tuta and too poor to be extracted. There are also several small pockets at the surface. The geo-2). Around the excavation represented in the irregular, the obloride occurring in seems and etreaks in the decomposed tufs, and do not con-tinue more than 30 feet below the surface (Fig.

ere getting anxious about the futures. poration had to go out and borrow some coal to fill its necessities. As few ships are headed this way from foreign collieries, large consumers more out of its yard and the other day a corto sell any more for the present, except on previous orders. One coast colliery sells no foreign grades, being short themselves, not only decline to make any more contracts but reluse Coal is a scarce commodity, and importers of foreign have been marked up 50 cents per ton. The advance is chiefly in house coals, such as Wellington and Seattle, though some grades of

It is stated that Tromac Database and Determine Determine to the most of the soot brushed from tables, and plate butte county, in this State. A large labors- replaced in a few seconds, without tools. The toy will be built there similar to the one replaced in a few seconds, without tools. The arguments of the soot brushes are tools. The condition of the soot brushes are tools and plate and plate are the soot brushes are tools. The condition of the soot brushes are tools and plate are the soot brushes are tools. The condition of the soot brushes are tools are the soot brushes are the soot brushes are tools and brushes are the soot br IT is stated that Thomas Edison, the in-

SAN FRANCISCO, SATURDAY, SEPTEMBER 17, 1887.

steam generator and engine, made by E. H., glugs for eleaning the inside. Any one that capecially adapted for running presses, sewing machines, grinding feed, cuttiry, Perry, feature, but essential to the life of a boiler, as have to be pretty rich to pay them in addition one which has a great influence on mining development. When rates are excessive mines of tube, so the scale or sediment oan be readily removed without disturbing the tube. The water spaces at the front and back also have

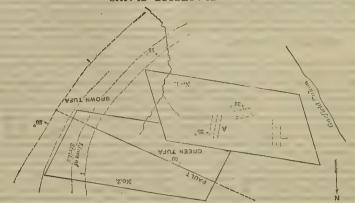


FARMER'S STEAM GENERATOR AND ENGINE.

sawing wood, pumping water, etc., it is the best boiler will soon burn out with bad adapted for any purpose where small power is needed on tarms, ranches, mines, etc., The boilers are thoroughly tested before boiler is a tour-horse power and engine three, leaving the shop by cold-water pressure, and



FIG. 2-DEPOSIT IN TUFA, BLACKFOOT MINE, AT A. FIG. I.



FIR. I.-BLACKFOOT CLAIMS.

where it is now undergoing a dressing. This piece of work will be subjected to the Govern-It was taken to the machine shop, Mr. Galvin, the foreman, has examined the casting and pronounced it to be as solid as a which it was east at the Pacific Rolling Mills. THE 20,000-pound steel stem of the cruiser in bed ent mort besize need need in

.nicb ers yedt ysw

the reason given.

tockholders.

eds ni ti brets to neat them to retard it in the to be a better policy for the railroad to encour-800. Most of these men have families to whom cessation of work for husbands and fathers means destitution. It would seem

Eow, 100 hands; Marget Ann, 25 hands; total workmen, including the Alice, nearly

150 hands; the Moulton, 100 hands; Silver mines will now also close down; the Lexington, work, letting out 100 hands. It is feared these

its employ who will be thrown out of work by

made to get the freight rate reduced, but with-out success. The Alice has nearly 400 men in

mining at an unprecedentedly low figure, the company is unable to declare any dividend for seed exed starratts uns. M. nesis assets ed.

The company is unwilling to, exhaust its ores without getting any return from them. Though

only commence mining, sgain when there is an assurance that the company can make money ont of its ores so as to pay a fair dividend to its

protect the interests of the stockholders, and

to produce the usual amount of ore to run the or si hr ailing to the brand end to policy of the brand all in to

noisibnoo ni ere ynaqmoo edt le senim edt tadt

may bring more favorable terms on the freight rate of salt. The works will close on October lat. The directors assure the efockholders

held a meeting recently and resolved to close down the mine and works for such a period as

the expenses of mining and milling, it is found that the mine will yield no profit. According. Iy the Board of Directors of the Alice Company

ton. The Alice mine has been paying the rail-road company about \$90,000 a year for salt. When they come to add this \$15 per ton to

the railtoad company delivers coal for \$6 per

for original cost of the salt, At the same time

less than \$15 per ton, or \$12 for freight and \$3 money. It seems that the profit from the mine went toward paying freight for salt. The Union Pacific railroad will not deliver salt for

They have been running along for some time, turning and making no a good producing mine to close down. A case, in point is that of the Alice mine, Montans.

The question of freight rates on supplies is

Railroad Freights and Mining.

Silveremith mine has already stopped this shut-down. Other mines in Summit Val-ley district suffer from the same cause. The

Many attempts have been

HANTHORNE is being thoroughly prospected. this port, and \$2.75 from British Columbia. during the week. The Tacoma works are again in operation and additional ampplies are expected shortly. Vessels in the cost trade COKE, which has been remarkably scarce, is now in better supply, owing to free receipts

complete and ready for water and fire.

are sold with or without engine and are nited

and out. The side plates rest on hooks at the This machine occupies but little space and is parts to get out of order, but is a good, plain, ally accessible in all parts for eleaning, inside of hard work without repairs. The boilers and out, The side plates rest on hooks at the essily accessible in all parts for cleaning, inside but other sizes than the one shown are to be are warranted in every respect. The engine is a model of compactness and has no delicate

Roman colonists were carrying with them everywhere their usages, their personal chattels, their implements and their money. It is the debrie of these that we always achume in the debrie of these that we always achume in is from them that we are often enabled to fix a strom them that we are often enabled to fix a is from them that we are often enabled to fix a fixen their commonement of the contraction coordinate of the contracted according to the rules of Roman luxury. The iron ing to the rules of Roman luxury. The iron mastere of that time were generally woodlines who considered their esjourn in our woodlines who considered their esjourn in our woodlines who considered their esjourn in our woodlines as a kind of exile, and who, their fortune being made, agpired to anjoy it in their sumy. South land, Laker in the second century

### The Colonists Fixed Themselves

The Colonists Fixed Themselves the colonists Fixed Themselves where the Romanized-Belgians succeeded in finding employment because the number of deur and luxury as the sub-structures excavillas of that epoch increased, also their granty as the sub-structures excavated at Stree, at Aiseau, at Gerpinnes and at Aorines, and Marcus Wells, asyall, Existin, as well as for the rest Gauls, sayall, Existin, as well as for the rest of the Roman world, that period during which the Bongerore Trajan, Hadrian, Antonnine, and the Emperore Trajan, Hadrian, Antonnine, and relatively, it was a fortunate time for and relatively, it was a fortunate time for the manity. Loud had person brought transantly. Long had person brought transantly. Longe had severy where consolidated of Janus was closed, and person brought transantly. The art of and perhaps of the Roman of Janus was closed, and perhaps of the Roman the north of Gaul and perhaps of the Roman we may deduce this glorious truth, that precedes, first control of Gaul and perhaps of the Roman the north of Gaul and perhaps of the Roman be already resoned a notable degree of bending the during the metal for the Roman and the Belgo-Romane of that country from the arching and the during the degree of the Roman and the Belgo-Romane of that country bending the all the skill compatible and the degree of the Roman and the Belgo-Romane of that country had a coquired all the skill compatible with their means of operation, and the degree of the skill compatible with their means of operation,

### America's Rank in Production of Iron.

Recent occurrences have drawn much aftention to the final introduction of the final intendential of the final intendential of the first of the relations between the iron frade of the telations between the iron frade of the first of the best shout a much inch whole year; in IO weeks about as much inch weeks as much as France during the whole year; in IO weeks about as much as English or Austria; in the weeks as much as English or Austria; in the weeks as much as English or Austria; in the weeks as much as France for the first of first o

THE RANK OF PIC IRON PRODUCERS IN 1886.

The production of the United States alone in 1886 was in axcess of that of France, Germany, Eussis and Sweden. At the red our bined, and but little under that the rate of progress of the made on this side of the Atlantic in recent years, America will shortly produce more pig iron in a given time than the hole continent of flurope. Great Britain, it is true, has done this in past years, but this is in not doing so now, and while that country is this form production we are still large importers of steel and iron.

The latest returns cover the first half of the country is this forme production we are still large importers of steel and iron.

The latest returns cover the first half of the calendary was, and the facel year ending June of the present year. Below will be found the district of the present year. Below will be found the district of the present year.

Had Seri's

Ivon ove.

Serep tron.

Serep tron.

Serei arrap.

Serei arrap.

Serei arrap.

Serei arrap.

Cotton ties.

Serei arrap.

Tin plates arra

Wire rods

Wire rods

Wire Arvilla

Otherins

These figures pri 2113 607.2 821.2 822,821 714,88 718,28 828,821 714,88 718,28 848 207 468 848 20 929'821 \$19'9\$ 604'9T 3,145 1,351 12,757 16,107 16,229 16,220 16,220 16,220 7881 741,107 477,141,1 741,107 7881 8881

These figures prove how enormous have been our imports, showing no abstement as yet.

Calls for any comments in addition to those repeatedly made in the past in going over similar statements.

WORE is going forward on the new ferry de-pot at the city front, in which there are to be two separate modes of egress and entrande for passengers going on and off the Oakland steamers, similar to that in use at Oakland.

The Thick Beds of Crayats, unleard of prosperity had carried everything to fabulous prices, a ton of croyats was selling at ten trancs on the car at the place of extraction. At that rate the ople at Geronsart represented a Veronsart rate the oble of St. (880 transa lost in the woods. We can understand after that how the communal place of Yres had been completely dug up and that even houses had been forn down to take out.

Which were lying upon their foundations. At the station of Yves on their foundations, At the station of Yves on the line from Walcourt to Phillips were the station of Yves on the line from Walcourt to Phillips were then 200 meters, only to gather up the ancient scories, which had served to balles the present of the content of the station of the railway. It was the foreges of the realitway, it was the foreges of Thys-Le-Chatseau, which were the first to work to as large scale the materials rish in iron; it is to an always eache the materials rish in iron; it is to their controus consumption that that the chart to work to their enormous consumption that that the for their controls are period of the Charleroi, of which the works in the canny for the Charleroi, of which the parts-furnaces) have worked up during a period of 25 years the truly prodigious quanceur (blast-furnaces) have worked up during a period of 25 years the truly prodigious quanceur, bear, the Charlerois of Line Charlerois, of which control of these beaps, the quantity of all forms and all chiefed the head of the money which of these coarse amphores, the numerous unconfusivity of the coarse amphores, the numerous unconstraint in the debrie of all the represented by the money which four contuits of the coarse amphores, the numerous chenelis, and the debrie of all many yielded until now, that is to asy, the four enders of the republic to the Lower Empire, all supersbundantly prove the exist-ton the mere of numerous, considerable and permanent metallurgical establishments. The commerce of numerous, considerable and permanent metallurgical establishments. The commerce of sumerous are of commerce of sumerous, considerable and permanent metallurgical establishments. The commerce of sumerous are of commerces of numerous, considerable and permanent metallurgical establishments. The commerce of sumerous are of commerce of sumerous and with Bones.

### Iron in the Gallo-Roman Epoch.

Tron In the Gallo-Boman Epoch.

Gaul, asys Gicero, awarmed with Roman merobarts, Each once had his specialty, each one his customers. The products of the Belgo-gort of High Services of the Belgo-gort of High Services of the Belgo-gort of High Services of High Services of the Grand the manufactures of Plantes and overveign and the the end and throughout the empire beauturgical manufactures of Plantes price beauturgical manufactures of Plantes of price beauturgical manufactures of Plantes price beauturgical manufactures of Plantes of Plantes of Plantes of Measy throughout the empire beauturgical manufactures of Plantes of Plantes of High Ferrices of Meason of the Amauging places. The stalls near manaions and charging places. The stalls near manaions and charging places. The stalls near manaions and charging places. The archive of incompound in the the manufacture of Luxembourgh establishes the remarkable degree of advancement of instead of the Trevirience of the Treviri

We know that there existed in all that region at the Beigo-Roman epoch, an industry extremely importeant, justifying the establishment of a special system of roads which, in the opinion of their constructors should bind all these timperial roads.

It was over these routes that the heavy wards one of ores or establishment was over these routes what the plant is a special roads.

The Antonines, Trajan, Hadrlan,

And other engines, Trajan, Hadribn, Andribn, And other engines, The Annothers, It was by them that the duckle from of 1 Entre-Sambre-et-Meuse was beduckle iron of 1 Entre Sambre-et-Meuse was bepart of these sonient roads have recently been recovered by archaeology or by modern industry. They were charged with crawks de Sarnsans, of the waters carried away the particles of mingled with calcareous astones. The inflitter stion of the waters carried away the particles of the waters carried away the particles of iron pulverized by the leavy stones, the object of metalling the organization of the waters carried are to-day in all little the mease of extraordinary exploitations and constituting as mass of extraordinary exploitations and set the mines of the constant of the beautiful fluttal ways: Mose, the Meuse, and Savis, the fluttal ways: Mose, the Meuse, and Savis, the fluttal ways: Little and the featuring which magnificently encompassed this majestic ourrents winch in wood and in mines, and majerion permitted that boats to decembe the mines of the beats of the bars, of the Engans as favored in relation to the means of compassion as in that of the minerals or tonests. It delayed not to obtain great benefits from a geographical situation so advantageous, and the magnificantly according to the means of compaction as in that of the minerals or tonests. It delayed not a speten of good routes. Its and from as the tasked through on the the Roman empire, and thus developed to commercial relations were facilitated through out the Boman empire, and thus developed to the bit industry.

In Proximals, and the will as the will as the trailers.

# In Proximity to the Ferraria

their existence. Some black articles in the soil, some preserved cinders and some coarse fragments of pottery are the only signs that are found of these modest dwellings inhabited by those whom they called the plebs, (the people), comprising the small celtivators, the metchants and the free strictures, the (iron-mine), the wilk as a built half-sgricultural, half-agricultural, half-industrial, (the mannino) avposed to the south, of a single story, on a level with the ground, with all its laying-out Roman, its hypogenest, sort of vasthive causte, baths, and its outhouses; a sort of vasthive where they manufactured a great part of the ob-focus aprung up, here and there. Around this nucleus sprung up, here and there, some cabine and huts, which, onestructed factor, one of their causteness, some cabine and huts, which, are seen of their existences. Some black articles in the soil, some preserved cinders and some obsise trages.

## Origin of Metallurgy.

[илмвев 4-соисгирер.]

(Translated for the Prass from the French by M. M. M.

The property of the press from the French Dy M. M. M. M. The Johnson to the press from the French Dy M. M. M. M. The Johnson to the property and in which face of the Norway of the concelled with abone to in consistency and in which is a cavity in forms or in mescary and in which is a cavity in forms or in the superstance of the concentrate of the concen

## The End of the Operation.

We come now to the Ford the come now to a role and the bound of the operation.

The End of the spongy mass in the breaded and be avers (also dely slay hold of the spongy mass in the breaded and the brace of a by hold of the meets rebaseds and reforged and reforged and reforged and reforged and reforged several times is then given over to other groups of slaves, blobs when you can be seen of slaves, the several times. The several single such according to the forest the stone of the several bloom of the second when the second he seen of the second when the second he seen of the second when the second he seed of the common such short the second when the second he seed of the common such short the second when the second in their more than the second when the second in their more than the second when the second in their more the second when which they were bringing of the second in their court in the second in their contributes or the second in the second s

# The Creusets of Six Bas-Fourneaux

There were found in the midst of these rules of these rules. To enable the ore, there is a description of the control of them. The first, in length about Impessor of them. To enable the ore, Here is a description of two of them. The first, in length about Imfa; in length about Imfa; in breach of them of them

# **CORRESPONDENCE.**

We admit, unindorsed, opinions of correspondents.- - &Ds.

# The Black Hills.

[Written for the Mining and Scientific Paras.]

The Bisch Hills, The Bisch Hills, [Written for the Bisch Hills, and the bisch Hills, and the bisch Hills of the bisch of t

no apparent decomposition, the propertion of the propertion of the composition, the propertion of gold to allyer is about the same as that of the control oxidized ove.

In the Portland mines, below to see that of the control oxidized over the control oxidized oxi

trable.

There has been much speculation as to the frable.

There has been much speculation as to the form in which the gold cours in the ores, and which the gold cours in the ore, and an arranged by perhaps equally good authority.

Telarium is also suggested. The fact is no one knows. From the richest rock, carrying several hundred dollars in gold, not a color can be obtained by washing in a pan, without first roasined by washing in a pan, without first roasined by washing in a pan, without first real building of the various means tried to reduce an outline of the various means tried to reduce these ores, some of which are very interestring, but proved unsuccessful, or at least were abandoned, because of the expense of reduction are partially and a partial saving of precious metal.

SAN DIEGO is about to pave several of the principal streets with dituminant rook,

Directions about handling the sulphides in

The Sulphides,

the solution, and not precipitate of latter in the solution, and not precipitate the last trace of it.

If the solution contains lime which has not lif the solution contains lime which has not lif the solution contains lime which has not been previously parted by sods, the precipitation of lead not having been found necessary, an insoluble calcium monosulphide may be previously the precious and in the precipitate does not appear until all the end of phides. In this case, however, the light yellow phides. In this case, however, the light yellow calcium precipitate diver to recognize the end of the end of the end phides. In order to recognize the end of the recture of, it is recommended to take a test-tube full of clear solution authories. The reaction monded to take a test-tube full of clear solution and the solution is decanted into the only had a clear solution is decanted into the only and the end into the the clear solution is decanted into the only had a clear solution is decanted into the off iterpress sump.

The consumption of sodium sulphide set to be off the solution of sodium of solution is very variable, and depends principally of ore is very variable, and depends principally the off set of the sulphide sulphides.

The solution of solution has to be breed of the sulphide sulphides, and the sulphides, and the sulphides.

This part of the process is also very easily executed. It is hardly necessary to mention that the colution about the well stirred with an over while sodium sulphide is added, and fast this reagent should not be used in excess. In case this has been done by inadvertence, more fresh lixivistion solution from one of the tresh lixivistion solution from one of the best of the precipitating tangs about any part of the precipitating the colution and one of the section of the second one of the second of the second one of the second of the second one of the second one of the second of the second of the second one of the second of the sec

may nevertheless be thereby diminiented to a major the precipites of the considerable stone. The precipites of the considerable stone of the precipites of the considerable stone. The precipites of the considerable stone of the precipites of the considerable state. The precipites of the considerable state of the silver precipitation of the silver precipitation of the silver precipitation of the considerable state of the considerabl

# The Precipitation of Lead.

The lixiviation solution may hold, outside of all the store of the sto

The Lixiviation Solution Before Pre-

[NUMBER 3:]

A Description of the Russell Process\*

Lixiviation of Silver Orea.

\*Mr. Russall prefers not to use a hyposulphite shock solution in making three lixiviscion teets, but to weigh solution in making three lixiviscion teets, but to weigh over each content place it upon the over solution to be sketch, and allow it to dissolve in the proper content solution is a difference, and allow make operands about make a noment Mr. Russell's statement, he having made about to a noment Mr. Russell's statement, he having made about solution as three scale, the would suggest, however, that by copying in these tosts more closely the module suggest, however, per happened a high state with those solution in practice. To be sure a hyposulphite stock about the content of the suggest of the module of the state with would be of interest convenience of the seasons. To be sure a hyposulphite stock solution is great convenience of the seasons, provided its use of the successive provided and the supplier of the seasons. The solution is great convenience of the seasons, provided the new convenience of the seasons. The solution is great convenience of the seasons, provided the new convenience of the seasons. The solution is great convenience of the seasons.

A. The sample is treated as follows: Add B. The sample is treated as follows: Add B. The sample is treated as follows: A B. The sample is treated with the for type or 125° to c. c. typosulphite solution, and heat to 125° to c. c. hyposulphite solution, and heat to 125° to c. c. hyposulphite solution, and heat to 125° to 130° F. Decant upon filter, wash out, etc. C. The sample is treated with ordinary solution; decanted and treated with extra solution. For raw ores, method G is most frequently for raw ores, method G is most frequently naced, A often gives as good results. B is

In Regerd to the Harviston Teets and in Regerd to the Harviston Teets.

It is advisable to adopt some definite practice, and I give below the methods recommended and used by Mr. Russell. The results of these, Mr. Russell asys, will correspond with the sealer sealer of the commended careful work on a large scale, within one-ball to the control of copper and the control of copper and a measure for 300 c.c. of the latter would control of copper and a measure for 300 c.c. of the latter would control of copper and a measure for 300 c.c. of the latter would control of copper and the copper control of copper co

### In Regard to the Laxiviation Tests

ante, we percentage of sitver rete in the earls, are sealed are state, and early all the percentage of the roasted ore with 9. Lixivistion tests of the roasted ore with 10. Lixivistion tests of the roasted ore with 20. Lixivistion can be expected in increasing the coaster of the seales of the same of the same of the situating to a large ceale. By comparing in its fing on a large ceale. By comparing in the with No 10 we learn bow much the extraction of the silver will be benefited by the use of Kussell's process.

If the ore is treated raw, most of these determinance of the same of the situation of the same of t

A. Pulp assay of the roasted ore.
5. Determination of the percentage of soluble safts in the roasted ore.
6. From these data the value of the roasted
ore, minus soluble safts, is calculated.
7. Tailings assay.
8. In comparing the value of the tailings with
the value of the roasted ore, minus soluble
safts, the percentage of silver left in the tailings is calculated.
9. Lixivistical.

In a lixivation mill the following determina-tions should be made every day.

1. Pulp assay of the ore and salt mixture.

2. Determination of the percentage of salt in the properties of salt in St. From these data the value of the ore is Y. From these data the value of the ore is also in the ore is salving.

# Laboratory Work.

the filter press are furnished by the manufacture of the mechine.

For reasons already atacted, it is not my interest reasons already atacted, it is not my interest already atacted, it is not my interest already atacted, it is not a various authorices into refined boilion. In case the subplices are sold to smelting works, they have been constituted by reasted in a reverboratory durance prevents to their casting need to reasted in a reverboratory durance not be a dead roset, and is principally intendent to be a dead roset, and is principally intendent to be a dead roset, and is principally intendent to be a dead roset, and is principally intendent to be a dead roset, and is principally intendent percentage of which is mixed with the subplices.

E. Balacoh & Son, Newark, pay for such prices of which it is a son to cape of the silver value (New York quotations for fine silver value (New There being at this moment no full and their beat and charge \$100 and the prices of the relations for the silver is in my powersion as to the relation out and results of the Reseal process in the various places where it has been introduced, it may now and it the subject also to some future time.

in this radical constant of the content of the break that he have the groups of the content of the south that of the content o

criefly used. Toested ores are generally first backed with pastes, and only it not mode as the second possibly first backed with pastes, and only it not mode and the selection of the second possibly for a long second possibly first be been contained and the second possibly for a long second

Mining Bureau Field Work.

are now attracting a large share of attention. He spent some time in Los Angeles county, posits of petroleum, asphaltum, bituminous rock and coal, natural mineral products which the Bareau, has spent most of his time in the southern part of the State examining the de-Mr. W. A. Goodyear, one of the geologists of been accomplished since its organization. The results of the work have yet to be published. been done by the State Mining Bareau than has With the discovery and embequent working of the gold mines in Californis, many new terms and phrases were invented, because there were

He found a larger development of the oil the coast. went from there to San Diego, and then came to the other counties this side of there along

is producing the most oil is Pico canyon, seven senter of the oil development and the locality that Mr. Goodyear informs us that the principal deposits than he expected, and there is every probability of decided increase of products for the future. There are many wells being worked, and there are also man, 'dry holes,' 'Jrean results of the follow's the follow's the state of the

mori eqiq emaa edt ai eeog bas redteget bexim ai allew tnereflib edt mort lio edt liA is shipped by rail to the refinery at Alameda. The oil at Pico canyon is piped to Mewhall, six or seven miles, and from there it is shipped on miles southwest of Newhall. Most of this oil

eral dry ones. They have good plants for sink-ing wells. Pico canyon produces in the aggreyood well goes very far toward paying for sevsunk before one good well is found, but the one costly business. Sometimes ten dry holes are further development, but this is a risky and an aggregate of 100 barrels a day-42 gal-lone to the barrel. There is chance for These wells together produc re being sunk. 9 or 20 of them are producing. Another petroleum center is about 20 miles southessat of Los Angeles, at Puente. There are a half-dozen wells there, and two mes are a half-dozen wells there, and the persons are a half-dozen wells there, and the persons are a half-dozen wells there, and the persons are a half-dozen wells there are a person and the person are a person There are about 30 wells at Pico, and Pico to Kewhall,

from San Buenaventura. They have just finoil to Santa Paula, which is 20 odd miles east the northern side of Santa Clara velley, in Ventura county, which have wells. All the producing wells in Ventura county pipe their Треге аге four от five сапуоня всатеетей яlong gate about 400 barrels a day.

ished a new tank at Hueneme, on the coast, and the shipments will be made from there bere-

carrels a day. Adams canyon, and that is producing 120 to 125 The largest single well in California is in

there were many alive in the oil itself surroundand Puente, where there was a pit into which a sheep had fallen, the pit being full of oil. The body of the aheep was full of the maggots, and tilory and that was on a hilltop between Petrolia can live in the petroleum itself, and that is the maggot. One place in particular he noticed Mr. Goodyear says there is one thing that

haps on some one's head. The deposits are stone itself is almost pure quartz, but satu-As to bitum inous sandstone rock, the sand-

egain they are bare. posits are covered with vegetation, and then town of San Luis Obispo. Sometimes the debered about very largely. Several very heavy e, sometimes falling very unexpectedly perafter a heavy charge of powder has been fired large pieces will cling fast, but gradually get blasted out in chunks. It is very tough, and Luis Obispo county slone to pave the cities of the whole United States. It is quarried and sed for pavements, there is enough of it in San rated with bitumen, and if it can be successfully

deposits. Five or six miles northwest of There is only one place in San Luis Obispo

working to some extent. Santa Cruz there is a place where they are county where they are working these bitumi

way as the other. The deposit is right on large quantities of it. It is quarried out in the shape of saphaltum, and on top of the ground it is mixed with sand and dirt. At Moore's Landing, in Santa Barbara county, there are on the surface of the ground. It coses out in the the shape of oil and gradually hardens in the In many localities there is pure asphaltum

ALL the country sround Grass Valley and Mevada City is being lighted with electricity.

Obriety reduction works is proving a perfect success and will be applied throughout the mill.—Southern Utak Times.

THE Rae Electric process introduced at the

one of the best features in connection with the

works will be erected, which it is said will be

SELICMAN is a new and promising mining camp in White Pine Co., Nev. A survey is being made for a tramway from the tunnel to

ar, but the soil is deep and of good quality.

the land once belonging to Rudolph Klotz, also tracts of railroad land near by. The land is well timbered and will require hard work to

from North Carolina have bought a portion of

THE Shaets Courier understands that the agent for the colony of colored people coming

come in this one. The parties interested feel as a blog out till lift up a this point and a selection of the sold as

river-bottoms, but no encess has been met. Generally the pumps lift the gravel but no gold. The objectionable teatures of the pumps used in boat-mining are said to have been over-angle in this one. The markies interested feal

contain gold. Pumps have been several times used in this State to take up the gold from

the bottom of the river, which is supposed to

ful, large pumps and machinery will be put on, The inventor of the pump says that he can force into the sluices all the sand and gravel in

Feather river, near the Beall place, where operations will be commenced by the lat of October. An eight-inch pump will first be

mpany proposes to construct the scow on the

gravel from the river-bottom into sluices. The

engine and pump which lifts the sand and

ng of a scow, on which will be etationed the

pump." Contracts have been let for the build-Butte county, to mine the beds of the Festher and Yubs rivers by means of the "Falcon

An enterprise has been undertaken at Biggs,

turn the river through the tunnel about Sept. 15th. The tunnel has been made one-half larger than the original bore. This enterprise

sement and rock work, expecting to be able to the tunnel and he had only a few days more of

inst. that they were nearly done timbering in

Superintendent Harris writes as on the 10th

to carry the full amount of water desired.

but it was found necessary to enlarge it in order

The tunnel was completed some time since,

Feather river for a length of some 13 miles.

In another column is given an account of the operations of the Big Band Tunnel Co., who sere almost prepared to lay bare the bod of the

River-Bed Mining.

to enutationem edt tot euler to evorg yem bas

sousrange ni elada nailarten A edt seldmeser

about a foot and a half thick, overlies this coal bed. This shale is rich in bitumen, strongly

side of San Diego, northwest about 30 or 35 miles, and southwest from San Bernardino. At one leality, a layer of bituminous shale

the southwest. The thickness will averages fully five feet where developed, It ranges from four feet to nearly eight feet. It is this from

not, however, contain much ash and burns freely and with a long flame. The bed lies rearly horizontal, but pitches slightly toward

slacks badly upon exposure to the air. It does

color of Mt. Diable coal. It is a sett coal and

es a poor quality of lignite; black and about the

from Elsinore. They are opened to some ex-tent; there are two or three small tunnels. It

Mr. Goodyear looked at the coal beds not far

sand particles is filled with the bitumen,

The origin of the substance is a disputed ques-

paying material, though they may discover new uses for the substance. It is almost entirely quartz-sand, but every part of space between

rock development depends upon the use of it as

at 800 or 900 barrels a day. The bituminous

wells, products, etc.

The total oil product of the State is estimated

Mr. Goodyear will report to the Mining Bu-rean in detail all the investigations, depth of

illuminating gas in Southern California.

where the same system can be carried out. expectations are realized, there are other places will be watched with great interest, for, if the

d, and in case the enterprise proves success-

well as the gravel.

place of grading, where the concentrating

The Prospector Analyzed.



V. T. DEWEY.

DEWEY & CO., Publishers.

Office, 220 Market St., N. E. cor. Front St., S. F.

M. B. EWER.....SENIOR EDITOR

Thermas of Subscription. Thermas of Subscriptions will be harracted authority of the subscription without cash in advances. All arracteges must be paid for at the case of \$3.50 per annum.

Address all literary and business correspond Drafts for this paper in the name of the firm. to paid for the fine face of \$3.50 per annua.

Advariante Reste.

I week I month, 3 mos. 12 mo

Our latest forms go to press on Thursday evening.

DEMEK & CO., PATENT SOLICITORS.

SCIENTIFIC PRESS PATENT AGENCY. Entered at S. F. Post Office as second-class mail matter

Saturday Morning, Sept. 17, 1887. SAN FRANCISCO:

### TABLE OF CONTENTS.

EDITORIALS.—Celico District; Farmer's Steam Generator; Railroad Freights and Minhig, 177. Pess. Brieg Fowels: The Freights and Minhig, 177. Pess. Brieg Fowels: The Freights and Minhig, 180. Honcom's Air Freights Are Freights and Freight, 180. Honcom's Air Briege, Washington Faritest, 180. Engine; Fig. 1—Blackfoot, Officers and Engine; Fig. 1—Blackfoot, Officers; Fig. 2—Deposit in Tule, Brockfoot Mine, 177. The Lete Governor Bartlett, 181.

Dericer, 181.

OORESESPONDENOE.—The Black Hills, 178.

MISOBLLLAUROUS.—Origin of Metallurgy; kmerica's Bank in Production of Irvin, 178. Lixiviation of
Silver Ores; The California Sahara, 170. The Pan- Willen, 183.

Alleged inverved Engine; The Steel Market, Heating pipes, 183.

USEFUL, INWORMATION.—How suckets fried The Steel Markets and The Markets, Indeed to Markets and The Markets, Markets and The Markets and Markets and

# Passing Events.

of by those who know him best. of California after a long illness, and the in-stallment of his successor, form the main top-ies of interest at present. Governor Water-The death of the Chief Executive of the State

Butte county, is now in a fair way to show re-sults. The tunnel has been enlarged so as to The great tunnel enterprise of Big Bend, well-known mining man, having large interests in Southern Californis. He is highly spoken man, who now takes the Governor's chair, is a

e excessive that the mines cannot be run t ined from the railroad company. The charges crisis by one of the largest mines closing down until better rates of freight on salt can be ob-The long-pending controversy on the salt so the solution in Montana has been brought to a son work on the river-bed will be undertaken. take the waters of the river, and by next sea-

with prefit unless a reduction is made.

The prop "ty of one of the largest hydraulic mines in the State of ot si etsel after in the state.

company will abandon the property se worth-less in view of the state of the law on hydraulic ment for a paltry fine of \$500. It is said the

ceased operations owing to expensive and pro-longed litigation, which is now zettled. State, and produced upward of \$7,000,000, but Bar mine, Wevada county, This mine was one of the factor one of the leading guartz mines of the of Eastern capitalists, purchased the Rocky engineer, has, in connection with a syndicate ISAAC M. TAYLOR, the well-known mining

it is connected by a daily stage line. SILVER REEF is the southernmost mining camp in Utsh. It is 100 miles south of the ter-minus of the Utsh Central railway, with which

\$2,800,000 in dividends. THE Plymouth Con. mine has paid altogether

force will be largely increased.

and when the bridge is completed the working

making fair progress. The timbers for the bridge across Maps creek are being gotten out,

WORK on the Napa & Oarquinez railroad is

ni gainim edt to taemqoleveb bas acitomorq

the bank will now take more interest in the

place of Geo. L. Brander. It is thought that

E. Bigelow has been elected vice-president in

THE MEYADA BANK.—James G. Fair has taken the place of J. C. Flood as president of the Meyada Bank of San Francisco, and John

much less censure him for his mental character.

way. If we cannot help let us not hinder him, Let this new creation of the mines go shout his business, working out his destiny in his own

his discoveries inure wholly to their benefit.

At the course he takes the balance of the world, which is largely against him, need not grumble, since his sacuifices cost them but little, while

what he would do certainly. But for this un-balance he is not, to blame; it is natural and he cannot help being impelled to the life he leads.

is not an entirely level-headed man or this is

him much, but, the rather, tarry at home and make money in an easier and surer way. He

disappointing, and which rarely ever profit

the mountains and over the deserts, often so

go out on these long and weary tramps through of ue? Were he as stolid and as much wedded to comfort as most of his fellows, he would not

pulses different from those that actuate the rest

May we not, then, excuse this bunter after mines if he seems sometimes moved by im-

Many of the great poets have been eccentric to

then, again, so were Franklin, Stephenson, Arkwright and Edison. The children of genina are apt to be queer, sensitive and imaginative.

serial navigation; so were the alchemistra who the tales and to metalish of the transmutation of metals; but

reaching out after the perpetual motion and

he is in the world of mining. He may be a dreamer. So are they, most likely, who are

Now, this being, so strange, confident and aspiring, has his counterpart in all the walks and vocations of life. What the original inventor is in the world of mechanics and science, ventor is in the world.

general thing, he believes what he says, and thus, being misled himself, becomes an effect-ive instrument for misleading others.

sanguine and even a little visionary. He sees things big and talks accordingly. But, as a

typical prospector a man of many idiosyncra-sies; brave, hardy and thoughtful, hopeful and starts as the notion takes them. Such is the pear eccentric and even cranky. They are odd and angular; go and come and work by fits and

deviations from the common paths of life, ap-

suit and calling, there are peculiar and excep-tional characters—men who, by reason of their

dinary mortals. But in this, as in every pur-

prospectors are not, of course, very unlike or-

In mental constitution the mass of mining

been in like manner incorporated into the miner's vocabulary have had a similar history.

bne uigiro relimis a bad a van tear emret redte

last general recognition and acceptance. Many

devious utility having, however, won for it at

as a provincialism, but almost a barbarism, gained standing in the republic of letters; its

ing, attached to the word. It was many years before this word, which was regarded not only

of which, before the era of California gold min-

the person who engages in this sort of work being called a prospector, and the result ob-tained a prospect; these being meanings, none

after, test or examine metalliferous deposite;

new termination but a new meaning was given. As now used, to prospect, signifies to search

with the word prospect, to which not only a

purpose, invented a new or modified an old one to meet the necessities of the case. It was so

words none that seemed to quite answer his

stances the miner, finding in the old stock of

nany new ideas to be expressed. In, some in-

the verge of madness.

.beqqida bas qu the beach and the substance is easily taken troduced in All Hallows college, Salt Lake, A METALLURGICAL COURSE has been intro-

### Washington Bartlett.

etrength. In May de sought rest and recuper-ation at Highland Springs; and the symptoms was failing; that the arduous duties of the gubernatorial office, following close on a warm-ly contested election, had over-taxed his Monday last, at 5 o'clook r. u., Governor Bartlett closed his earthly career. His death was not unexpected. There are been a whistoner and the fair fails of the fair fails of the fails of

under easy control, on account of the direct case seemed to disappear, connection between the air-compressing cylinders, and the fact that on large reservoir must be filled and pressure is worked without reference to the speed of the weak condition. He grew no better, and Monite worked without reference to the speed of the very rapidly, and the train can always be kept spots and ruined by sliding on the rails. By this construction the brakes may be applied eles that the think beyond which the wheele would be entirely prevented from revolving, and would ease elect would be ease. pressure applied on the brake oylinders may be recervoir to be replenished, and it may always be regulated to a nicety, so that the amount of because, being pumped directly into the train perge ogiet on ai erore, thore is no large

des its gressure diminished to such an extent proper degree of force. The reason of this is that when the air is let out of the reservoir to fill the brake oplinders its volume is increased necessary for supplying the brakes with the proper degree of force. The reason of this is Ullantos si nadt bonistniam ed taum ris to n a reservoir is employed a higher pressure quired and from which it is sent slong the train nto the brake cylinders when it is desired to apply the air brakes. It is well known that trains the sir is ordinavily first compressed by an air pump or compressor and forced into a large reservoir, where it is stored for use as re-In the compressed air brakes used on railway

Hanseom's Air Brake,

required to fill a reservoir of sufficient size for the pipes.

W. W. Hanscom, the wellmust be maintained, and it also requires a long time to compress the large quantity trains. This excessive pressure desired presente when frequent stops have to be made, as in the case of local or suburban noless this reservoir is made of 

the other incommentation of the other than the othe

is operated in the neual way, and on the opine between it so the between it said the engineer's brake-valve quinq gaisserquion-ris edT be applied. cylinders when brakes are to the sir pump into the brake ethe reservoir os as to directly from mori yltoerid ris ed served pipe, dispensing entirely with

sti easeroni nedt lliw quaq edi pipe and brake-cylinders, and is opened, this sllows a free escape of air into the traina fixed pressure is reached, but to be kept continuously in motion. When the brake-valve cess of pressure to blow away. It is not intended that the mudw begoped when presente and to allow any exto a before the more and the copies of the governor or safety valve is to allow the sir compressor or a short of the copies of t sary for operating the brakes. is placed a safety or governor valve, which is introduced just above the pressure neces-

speed with the braken, is to keep to a steam cylinder free from the brings, and would, if the grapes at steam of a steam The object in keeping the wola s ts noitom ai quarq

-ger of deal Vlevideracimon nur of berinper at it oylinder, thus requiring some time to empty its purpose in a very satisfactory manner.

plied, the brake valve is opened and air is admitted to the train pipe and brake cylinders, and the compressor will immediately commence pressure is reached, the pump would stop and would not be prepared for quick movement when required. When the brakes are to be apulate the presence on the brake cylinders.
If a governor valve were used which would allow the steam to be shut off when a fixed

running faster until the presente in the brake cylinders increases to the point at which the governor valve is loaded, the speed being grad-

Photo. by Taber.

Yorkers for \$600,000. We have bad some big predictions concerning in the son this some sing in the son this or the son in the son that of quantities of the son in th

pays from the grees roots down. The ground is about eight feet deep, and on the

MEW placer diggings have been found on the tributaries of Eaniscu lake, in Northern Idabo. The streams have plenty of tall, as well as plenty of water. The ground mays from the grass fro

A good oitizen and able and honcest servant to the people has passed to his reward.

I There was no time when I a II. Videnone to do the condition of trust man accepts a position of trust of leave his work.

pot dropping the duties of his office and seeking rest, he said:

When expostulated with for

His death is a public bereavement. Few men in odicial
position have been as conscientious and free from partisen
bigotry. Only a few weeks before bis death, and when the
mysterious shadow was deepening around him, he said:
"I have always considered my
office a sacred frust green me
by the people, and that I must
discharge my duty to them
without regarding my own perwithout regarding my own perwithout regarding my own personal feelings."
When expostulated with for

-evaered oilduq a ai diseb siH

1886, Washington Bartlett was nominated for Governor, and elected by a majority of 652

Presholder in Iraming a new oity charter, and in 1882 was eleoted Mayor on the Demo-oratic ticket, and in 1884 was re-elected. In the Democratio State Couvention September,

he was selected to serve as a United States Senator, Governor Newton Booth, In 1880

ple's ticket and voted for to the State Senate on the Peooity. In 1873 he was elected

Three years he discharged the duties of Secretary of the Chamber of Commerce in this

of Harbor Commissioners appointed by Governor Haight. For a brief period he practiced has in partnership with his brother Columbus.

elected County Clerk, and was re-elected in 1361 and 1867. He filled the vacancy cansed by the death of James H. Cutter, on the Board

San Francisco: Printed by Washington Bartlett, No. 8 Clay etreet; 1849. He took part in the Vigilance Committee in 1856. In 1859 he was

Bancroft library. Under the title is the imprint:

So far as known, the only extant copy is in the book in this oity, entitled, "California As It Is," and As It May Be—A Guide to the Gold Region,"

supporter of what was just and proper for the welfare of the State and people. It may not be generally known that he published the first

gairitan bas elde as lleamid bevorq syawla

Plumas Oon. Mining Co., Greenville, writes us that good quartz miners can get steady employ-ment at Greenville and Crescent mills, Plumas county, at from \$2.50 to \$3 per day. MINERS IN DEMAND. -8. R. Prenties of the

The Delbi mine, Nevada county, has de-

Governor Bartlett was born in Savannah, Georgia, Feb. 29, 1824, where he spent his boyhood days. Like thousands of plucky and have not ventured to hold out the hope of rehad received a stroke of paralysis on the left side. Since then his most sanguine friends

1850, in conjunction with John Robbs, he gested the Journal of Commerce, a daily perper. The Bartlett was editor, and immediately took an energetic part in furthering the admission of California to the Union. In 1853 Mr. Bartlett and his brother, Columbus, established, the Revenue As a surmalist, he ished the Revenue As a surmalist, he the mines. Young Bartlett resolved to stay in the city and start a newspaper. In January, enterprising young men, he caught the gold fever, and sailed from Charleston in January, 1849, for California, On arriving in San Francisco he found nearly everybody heading for the wines. Young Bartlett resolved to ster

others in following its example. by the Alseks Union Mining Co. This is said to be the first of three or four projected mills, and the success of this one will decide the las island, 23 miles north of the Treadwell mine, MANY new quartz-mills are going up in Alzeks. One of five stamps will be erected by The Lake Mountsin Mining Co. on the Lucky Chance. A new mill will be erected on Doug-last island 24 miles north of the Treedwell mine.

Works, including the real estate at the corner of Second and Jefferson atreets. Ives Scoville, sieco have purchased the Oakland Iron Edward Clark and E. B. Morton of San Fran-MESSES, GEORGE COTTRELL, T. L. Armstrong,

lished the Evening News. As a journalist, he This pressure can be increased very rapidly, a pioneer Oaklander, was recently the owner. The mines of Cherry Creek, Nevada, are showing signs of improvement, ually decreased as the pressure increases in the train pipes and brake cylinders.

THE LATE GOVERNOR BARTLETT

HEATING PIEES.—Pipes for conveying hot steam for domestic and other purposes are coming into quite general use in large cities. The Boston Heating Company expect to lay 13,000 feet, or over two and one-third miles, of four and six inch pipes before November 1, The testal plant will oost about \$200,000.

THE STEEL MARKET.—America now rules the prices of steel throughout the world. Kublow's says: North America gives the one in prices is always in proportion with the increase of the large demand of that country. The demand from other countries, which is exclusively for steel rails, keeps, as a rule, very much on the same level.

An Alleger Improved Evelue.—Sir I. Lowthian Bell, in a speech recently delivered, reports that the Hon. G. A. Parsons of the firm of Clark, Chapman & Parsons of Stackscheeded in constructing an exceeding it is said, with a very moderate consumption of coal, makes 10,000 revolutions in a minute, and can work up to the astounding speed of 30,000 revolutions in a minute, and revolutions.

THE CANTILEVER BRIDGE NOT MEW.—Mr. Cawley, formerly professor of engineering in Japan, caused exceptional interest by reminding the members of the British Engineering Lustitution at their last meeting that the cantitation at their last meeting that the cantitation at their last meeting that the tapanese that which had been adopted by the Japanese bridge builders for centuries back. At Vikko bridge builders for centuries back. At Vikko been built for 200 years, although it was called a temporary bridge.

LUBRICATING ORE.—The chemical laboratories connected with our leading railroads are
devoting close attention to the character of lafered to railroads having laboratories is improving. A first-class laboratories is improveing. A first-class laboratories was possible loss
arx hours without showing may appreciable loss
from evaporation; its fashing point should not
be below 300°, and it should not congest at
zoro. For cylinder oil the flashing point should
solve without should not be below 300°.

Great improvement in Ritle Manupactures.—Great improvement has recently been made in the manufacture of rifles; 120 barrels can now be rolled in an hour by one machine. They are straightened cold and bored with corresponding speed, and even the rifling is now done automatically, so that one man tending strates per day. With the old rifling machine 20 barrels per day. With the old rifling machine 20 barrels was about the old rifling machine 30 barrels was about the ching a bell to easil the rifling is completed ring a bell to easil the attention of the workman. One man is thus the attention of the workman, one man is thus a balled and when the rifling is completed ring a bell to easil the attention of the workman.

LIGUID FUEL.—A series of tests of the Baku oils for fine and patronage of the Baku oils for fining marine steam holiers is about to be made by Mr. H. H. Thealte, of Sheffield, Effectively, of Sheffield, The oils—crosote and cetaki from be made on the consote and cetaki from the Thwaite yet seek resulting from the Thwaite yet seek resulting from the Thwaite space. The collects of a plenum supply of sir, sir and steam, and steam yers se, mill be secretizined. The sead steam, yers, will be acceptained. It is some tip of the sults of these experiences are likely to be made auths of these experiences are likely to be made auths of these experiences are likely to be made auths of these experiences are likely to be made auths of these experiences are likely to be made in Association in Manchester. Locomotives in Association in Manchester. Locomotives with most satisfactory results. From miles—with most satisfactory results. From miles—with most satisfactory results. From miles—with most satisfactory results. From observer than either of the Brit. Do observed of 19 proposes of the satisfactory results. From more costly than wood. The cost of wood fuel, but however, is intercaping years that petroleum is some costly than extoleum would be invaluable. The average censumption of petroleum is 25 pounds per train mile, and one gallon of oil weight shout 84 pounds. Twenty trial trips were made, and the engines can be altered for the purpose of burning petroleum at a cost of trom 500 to 808 unpes each.

ducers.

Prior to the war the steel industry of Pitts.

Prior to the a sorry figure—it was an "intent burg cut but a sorry figure—it was steel steel of a protective tariff it has become a sheld of a protective the wonder and admiratory youth, attracting the world.—Iron Age.

Tealized.

Some two years ago another local firm of steelinesters placed a considerable quantity of steelinesters placed a considerable quantity of allowed and the steel with a firm of London dealers, who sold it as and no complaint was ever made same prices, and no complaint was ever made of its quality, although it was bought not only in Bregand, but in France, Italy, Spain and a number of other continental countries. The circumstances of other continental countries. The circumstances of start of the star

proportions which require heavy shipments of goods at present, and practically guarantees an gestabiliahed trade on a gradually increasing scale for years to come. Bagehaw Bros. of Paris, London and Brussels are handling the steel in the countries mentioned, and report that their expectations have been more than that their expectations have been more than that their expectations have been more than the countries.

MECHANIGAL PROGRESS,

lliM bas saiM at syollA muaimalA

Масріпоту.

Machinery.

The numerous alloys of aluminum which bave been produced so successfully and economically by the Cowles electric emelicing process have by the Cowles electric emelicing process have been thoroughly tested in a great variety of the Cowles are thoroughly tested in a great variety of the construction of the construc

The steel industry of Pittsburg is by no means an old one, but its growth has been remarkable, and the quality of the steel produced has kept pace with the growth of production. Indeed, it was the quality that caused the rapid growth, for the latter is the natural result of the latter is the natural result of the lormer.

American Steel in Europe.

unon.
These demonstrated facts show that these alloys are admirably adapted for bearings, and any place where heavy work has to be done. Moreover, these metals are cheap as well as strong, hard and tough, and they seem to be particularly well adapted to many uses about the mines.

with those which pass rapidly away, "exere-

SOIENTIFIC PROGRESS.

Paychic. The Three Fores-Physical, Vital and

[Written for the Press.]

[илмвек 6.]

Therefore, going on in the body of the amœba are the source of the energy expended in its movements.

V. It is respiratory. The metabolic changes are processes of exidation. The tabling of one particular substance into the body, coapagen, and excreting one product of metabolism, carbonic acid, together with other processes more specially expedience of the teapiratory spoken of as constituting the respiratory processes.

processes more especially oxyderively and especially oxyderively decreased more especially oxyderively alteraguately process.

It is reproductive, "This unit, after a same and a more approductive, "The unit, after a same become a mit. This unit, after a more representation of new protoplasm in excess of the factor of the continually using up, may, by the addition of new protoplasm in excess of the protoplasm in excess of the properties of the capable of the process o

workers for aluminum iron siloys for the steel-worke.

The most interesting of aluminum alloys are those with copper, zinc, tin, and nickel, and some of these have developed very extraordinations of these have developed very extraordinations of these have developed very extraordinations of the desire state of the following tests and the following tests and the following tests at the foll (To be Continued.)

Heatting by Electricity.

The advence of the advence sees of electricity that it is a dimed as an of the advence of the electricity that it does not trais the temperature of the tablesse, asy as M. Ackarse, apple), under certain conditione, of evolving heat. This property is about to be turned to profitable account by the about to be turned to profitable account by the heave amounced that, in fature, in addition to be turned to profitable account by the property in fight, they will be prepared to furnish a supply light, they will be prepared to furnish a supply light, they will be prepared to furnish a supply light, they will be prepared to furnish a supply light, they will be prepared to furnish a supply and the access which the society offer to their customers have been constructed in view of the use to boiling two cases, between which the appliance about 13 pints of water can be raised to boiling tonk with 4 amperes 100 volts. In certain point with 4 amperes 100 volts. In certain ing the curling tongs, the use of gas 1sts and spirit lamps being rigorously forbidden.

Our THE Waves,—In a pamphlet issued lastending langer and party is point with 4 amperes 100 volts. In certain ing the curling tongs, the use of gas 1sts and spirit lamps being rigorously forbidden.

The main end of rearries form.

The main end of snimal life is the supporting of that life; this the snimal does through the absorption of snimar. The basic type of snimal occupies our field of vision, when contemplations and the stone source of snimar before on the snip of special stones. There is snother consideration, and that is the forms which protoplasm assumes. These is snother consideration, and that is the forms which protoplasm assumes. These hard forms according to the theory of volution have become adapted through, or by means of, all the controlling and surrounding influences, all the controlling and surrounding influences, all the controlling and surrounding influences, and the conditions and charges of Nature, as finally to evolve so adapted themselves to these store, over have so adapted themselves to these store, into a perfect man. There is another theory, that of development, So great is the evidence of degree in Nature, as finally to evolve sign in Nature, so uniform the plan, and so development, the development of an Author, leading and a complete the development of an Author, leading and so register the development of an Author.

There is another of an Author, but that to refer the idea of an Author, leading and so register and so the development of an Author, leading and so register the development of an Author of the plan, and so register the development of an Author of the plan, and so register the development of an Author. Designer and dreat development is against the very principles which it is a gainst the very principles which it is a gainst the very principles which it is a gainst the very principles which it is a proper and the very principles which it is a proper and the very principles which it is a proper of the complete of the complete of the complete of the development of the very principles which it is a proper of the

Microver, these nices are closed as went as the missers of controls, the controls and tough, and they seem to be able materially well adapted to many uses about the misses.

The incorrodibility of aluminum bronze and the misses.

The incorrodibility of aluminum bronze and any present of rodiparty bears or bronze, will render it all admirate breaks and our progressive manufacturers will to the action of acid mine water, or corroding from the progressive manufacturers will will be found to possess properties which works and our progressive manufacturers will always remain clear, their materials and drapted to these uses. With it the corresponding to the area of the material seems peculiarly well and present and area of the material seems post of our manufacturers and many times stronger and many times acreens and ig bottoms and bathery screens mesh. And though its hardness and seems post of our manufacturers once insist upon the acterograph is hardness and bathery screens, with the fire when the coresion some greater dialities when the consuments once insist upon and struggled with materials of some greater of foulties in punching fine mesh, we may confourty rely upon the enterprises and ingentify the surface of the conformation of our manufacturers once insist upon the enterprise and ingentify whether woren or punched, and with the steel of the or of our manufacturers once insist upon the other and and resting to the conformation of our materials. To those who have not punched, and with the steel of the conformation of our materials and strength materials.

It is true that the consumers once insist upon the conformation of our materials of the diagraph of the seems of the conformation of our materials. To those who have not punched, and wish the conformation of our materials of the ordinary rolls, and we under the ordinary will and we site of seem now be procured in any desired the diagraphy.—Manufacturers on the diagraphy,—manufacturers on the diagraphy,—materials of the sired of the procured in any desired the

Our THE Waves.—In a pamphlet issued alsteration of the control of

ELECTRIC METEOROLOGY.—Mr. G. A. Rowell of Oxford, asys the Meckristom, sends us a pamplet with the above title, in which he discusses the canes of the changes in magnetic cusses the canes of the changes in magnetic poles to the furopean and American magnetic poles are coincident with the centers of greatest cold for the two continents. Hence he attributes the shifting of the magnetic poles to the same thy continues to dendiently able of consistent the first of the meanforth of the first of the continues of the meanforth of the first of the continues to decrease, so our winters will increase in length and severity. Without laying undue stress on the point, the author is gradient and severity. Without laying undue stress on the point, the author is octainly able to appeal to our recent melan. Only experiences as an argument upon his side.

to the factor is the natural result of the torust, for the drowt, a faire forms.

So excellent has become the quality of Pitte:

To the forms of the set of the dealth of the place of Beglish steel—which was the American marrial to the factor of the set of the factor o

Prof. Could has ascertained that serial teletric Could has ascertained that serial teletrate of the could have ascertained that serial telestate on poles transmit electricity at the rate of trom 14,000 to 16,600 miles per second, and that the velocity of transmission increases and that the distance between the wires and that the distance between the wires and that the observances. Subservances with the hight of succepts, or, in other words, with the hight of succepts, or, in other month, the submarine cables, transmit slowly. While wires enspended at a feeble hight transmit signals at a velocity of 12,000 miles per second, both of trom are the profession of the professi

Ay electric-light plant is being placed in the Sierra Butte company's 60-stamp mill at Sierra City.

ounderbotics, the soluting us set free in consequence of inkernal obanges; the resulting movement is automatic.

III. I is receptive and sesimilative. When the amone anyelops its food, certain parts of its are dissolved, are converted from dead food to retrain parts of the amone.

IV. It is metabolic (Schwann, 1839) and sectory. "Part parts of the amone.

IV. It is metabolic (Schwann, 1839) and sectory. "Part parents of the impediation of food material, for the increase of the amone by addition of food in the food is not includinted."—Foster for the breaking not of lod protophamina. This change the breaking not of did protopham intoproducts which are cast out of this change the breaking not of the products which are cast out of the body products which are cast ont of the body was fooder in the body, we have reason to think, says footer, that they are of value for the purvelund and the the part of the purvelund in the road effecting of the purvelund of discovering and effecting of the purpose of discovering and effecting of the purpose of discovering and effecting of the purpose of the purpose of the more are of value for the purpose of discovering and effecting of the purpose of the purpose of the more are of the purpose of the more are of the products are of the purpose of the more are of the products are are also body of the amone a. Such products are belong the more and effecting of the purpose of the more and effecting of the purpose of the more and effecting of the products are generally termed and effecting of the products are generally the more and effecting are generally termed and effecting of the more and the products are generally the more and effecting are of the products are generally the more and effecting are of or of the products are any product and the more are are also and a discovering and effecting and the products are any products are any products and a section of the products are also are of the products are are any products are any products are are any products are are any products are an

First Cause, is against the very principles which we apply to every day occurrences.

It Bioplasm is contractile. The changes in the bioplasm is contractile, The changes in the bioplasm of an amedoba, which produce what are etermed "sameobid movements," are fundamentally identical with those which, when occurring in a muscol cause a contraction." "A macular contraction is essentially a regular, an amedolar contraction is essentially a regular, much a montraction is ended to the process."—Foster.

It is in irritable and automatic. Mover the amentrace of the amentrace of the contraction of the contractility of the bioplasm. "Any living matter, which is an active manifestation of the contractility of the application of energy is said to be irritable matter. These contractility the energy set free by the explosion ratically estimates to irritable matter. The amentrace of which application of stimulus to irritable matter, which application of stimulus to irritable matter, which the application of stimulus to irritable matter, which application of the body itself. Moverned to the aments are those, the causes of the amedos. These changes are not dition of the amedos. These changes are not always due to the simulus of surrounding our ournessences; the energy is set free in consequence of internal obserges; the receptive and assimilative. When mental is automatic, and assimilating moverners are properly as a treater in automatic of the receptive and assimilative. When the arterial starts in the set is the starts are not at the starts and assimilative.

Organic Form.

The Pantheon at Milan.

Alexander Manzoni, the First Tenant

# aigned to render the slightest sound andible. The word telephone was used in 1845 to deargan a star deargan to the star substance of Epple and the star substance of Epple and the following the transmission of signals of the sounds produced by the together the transmission of the produced of the sounds produced by the special star substance of compressed air through trampets.

USEFUL INFORMATION.

How Snakes Shed Toeir Skin.

Professor Samuel Lookwood, of Freshold, New Jersey, having witnessed the process of a snake shedding his skin, furnished the follow-ing account of the same for publication in Nature:

The monument inagentic to the Parish.

The monument inagentic decembly at Milan is a complete history of the ducby, the commone, and, above all, of the bounded of the occup, the complete history of the ducby, the component through it is appendent; its slavery and its promise the control and caupture upon stones and sarbiture apon stones and sarbiture and schoes of Lombard bear despited in the Majorian of the standing the center of these grant of the standing the center of the form the principal leaded of the standing the center of the form of the standing the center of the Standing the center of the form of the order of the filterious were deposited the remains of the Mayorant.

were deposited the remains of the Eilst Harstrough of the tutational factors, and the said of the total the total the total factors, beat yet undersied a coropolies. In March, 1869, we are seroptice, the total of the committee of the consistency, who died in exile in 1869, was also placed ander the vaults of Farle in medic. Afterward, in view of a new and present of ingedication of the Communal Council, the works of interior management and of artistic decoration of the pushed, and of artistic decoration of the tent magaterial work, was able to account on of the the magaterial work, was able to excent in completely finished, to the authorities and to the public, at the solemn inauguration of the tent angularities and to the public, at the solemn inauguration. The pulyobrome ornamentation of the authorities and to the public, at the solemn inauguration. The pulyobrome ornamentation of the cample to soler, severe and harmonious. Around the soler, severe and harmonious. Around the soler, severe and harmonious. Around the soler, severe and charmonious. Around the soler, severe and alternation of the branch on the time time time to the intertion. The interior cand medium sones and comprise the secretary and reclaims on the particle of the four tents, or the interior. The interior and medium sones and comprise the nation of the interior. The interior and medium sones and comprise the rest of the interior of the interior. The interior and comprise the one in the cast of the interior of the interior. The case of the interior of the i A WONDERFUL PIANO.—Transporting planos, and even planes capable of printing the notes and even planes capable of printing the notes even planes do not seem to have berned out the planes and manufacture. A Berlin inventor—to out very extinstantly and Elewyoh—is, however, wit, Chevalier Van Elewyoh—is, however, with, Chevalier Van Elewyoh—is, nowever, with a printe, after 35 years and manuscredited which having and manuscredited in a solved the proplets of an apparatus and instruments, solved the proplets of an apparatus and instruments a

Tailtroad Horses.—English railroads do the major portion of their own carting, collecting and delivering freights at the freighters' doors, and edivering freights at the freighters' doors, baye in constant employment no fewer than 5200 horses; and of these 1000 are located amployed in ewitching care, at which business at heavy horse weighing about 2000 pounds can be good service. They soon become very extence obain elset, and start the car by standing with the trace obain elset, and start be car. Do soone very extence obain elset, and start being hear, without moving their weight eights the car. They also learn to beit weight eights the said without a moving their deet, throw their shoulders forward, when they are obain else the car. They also learn to their weight eights the car has acquired sufficient speed, and step saids without a word of compaged, and step saids without a word of compaged and step saids without a word of compaged and step saids without a word of compaged and step saids with a saids with a said with

BANANA LIQUOR.—The Indian Agriculturist abounds abounds aboundes that I and a shounder abounder abounder abounder abounder abounder the state and wonders the the state and wonders has been utilized for this purpose prickly pear has been utilized for this purpose in Malaga, and with considerable advantage to a fermented it now appears that mission. A state of the constitution of the c

denies repose in the Famedio, the tout grand occoperators of Italian unity, and coperators of Italian unity, and coperators of Italian unity, and really acting the denir description of the color of the control of the color of

REMOYING BUST FROM IRON.—It frequently the contract of the con

one gea, while amonites an entreeping of the average duration of life only 32 ammonite, and selfs of phosphorus render the ammonite and the arrivable and the properties, and the properties, and the properties, and the properties, and the properties are averaged by the greatest of control of the properties are averaged by the greatest of the FIRETROOFING SOLUTION,—For rendering fabroron, and objects fired proof, a writer in La Noture recommends proof, a writer in La Noture recommends be proof, a writer in La Noture recommends be observed by the properties of solar in the continuation of the properties of the solution are rendered in combustible. The solution are rendered in combustible. The solution are rendered in combustible. The solution sells no deserved in the properties of prospects of the solution is and salts of phosphorus render the armonia, and salts of phosphorus render the principal sells and salts of phosphorus render the properties, and has been used with the greatest properties, and has been used with the greatestic properties, and has been used with the greatestic as a wash in cases where as a nitseptic is needed. The solution has no odor, but its taste is otter.

Evolusing consequence to mismose glory,

Evolusing Workmen for a consequence of technical much to be regretted that the lack of technical the inclusion of the coupled with the complex coupled with the coupled with the suciedal policy as generally adopted by our workingmen in opposition to the apprentice system, should so ectionaly curtail the supply of seriol of the collowing when the serion compelled to send abroad for skilled artisans. We seed abroad for skilled artisans were similar to the following: "An influential from of New York alive states of the collowing: "An influential from of New York alive samples are seed to the secretary of the second of the secretary of the tollowing: "An influential from the artisans to manufacture of Sheffield artisans to have an experienced artisans to have an experienced artisans to whom they offer good weges. Constitute and the constitute of the Sheffield silversmith with the offer is of the opportune, and there is every probability of its being socepted."

Bro improvements are going forward at Yaquina bay, W. T. The Government jetty has been extended 200 feet, and workmen are driving piles in water 28 feet deep at high tide. The stretch of tide-land in front of the hotel is being filled in with earth taken from a neigh-

# Philosophy of Longovity.

OELERY AS A YOOD,—Oelery is one of the most fragrent plants the products of which are used as food. In its wild and uncultivated as food. In its wild and uncultivated at food it rapk flavor and peculiar smell; the states it of the gardener makes the stalks tender and agreed by the tastes. They are covered with of the gardener makes the stalks allowed dirt as they grow, the leaves only being allowed it os appear above ground. By this means light is of appear above ground. By this means light is accorded, and the eaven mild and sweet, Oelery should not be eaten mild and sweet, Oelery should not be eaten that the additional burden which this vegetable to with Dread and of cheese, it is easily digested, a most pleasing reliah. There is much in modern life that tends to be about the the translation of Longovity.

There is much in modern life that tends to be about a calcione and to diminish the probably to be about a calcione of the calcion to begin will the tends of the calcion to begin with the tends of the calcius of the calc

THE BEST TIME TO BATHE,—It is best to be do, as any danger of ostering cold is thus avoided and the complexion is improved by leeping warm for couple of oral bours after leaving the bath. A couple of oral hours after leaving the bath. A couple of proper or a thin bag and then in the bath-tub is excellent for a solitoning the part of the best of a thin bag and then the bath is a couple of the bound of a thin bag and then the bath of a thin bath of the best of a thorough cleant are son is the best for a thorough cleant and purifying of the best, thorough cleaned and taken and the present each on is the best, of subtur and moleases is considered and the present each of subture of the book. The old-fashioned among the best, of stake, A strictly vegetable and fruit diet is followed by many for one to two weeks,—London Loncet.

Oxygen and the Hare.—It is said that a good supply of oxygen is necessary to the balt partitions of oxygen is necessary to the balt partitions of the hims, and that those who go schoolboys of London who never west have as the the coldest whiter weather, have an abundant or the coldest whiter weather, have an abundant crop of hair which lasts them a lifetime.

The bead needs to be washed frequently and mell aired.

The Mediciant Properties of Vectables, Erc.—Spinsoh is believed to act as a stimulant on the kidneys. Dandellon as a too, Asparagus as a blood cleaner. To toliver, Beets and turnips are said to be fonice. The red onion a nervine of some value in sleep-lessness and nearly is.

A dog bitten by a rattlesnake in Nebraska, instead of dying developed hydrophobis and bit 14 head of cattle, all of which died.

All the Gancer Discussion.

All the matter relating to the above discusation, has been printed in pamplied at the condition, has been brinted in pamplied form; this will give everyone an oblicating to a consecutive and collected of reading in a consecutive and collected of reading in a consecutive and collected of reading in a consecutive and collected or reacer the question of a permenter cure is a rate one, the question of a permenter cure is a rate one, the discussion of a permenter cure is a rate one, the knife is of no avail, except in a rate of the knife is of no avail, except in a rate of the knife is of no avail, except in a rate of the knife is of the question of the control of control of control of control of control of control of the c

The Cancer Discussion. GOOD MEALTH,

Home Mode Havin Grenandra,—A conferent of the conference of the following method for personal desiring to make their own hand grenades: Fill ordinary quart wine bothles with a saturated solution of common saft, and place them where they will do the most good in case of as the argument of the found nearly as serviceshle as the expensive hand grenades you buy. Should a fire break throw the center of the anticient to break out throw the center of the farm of the water touches, and make it nearly object the water touches, and make it nearly object the water touches, and make it nearly object the water touches, and make it nearly many cases, where a fire is just starting, when the delay in proventing water might be disserted.

need to known, says the London Invention and Invention, says the London Invention, but where the known, says the London Invention but wheever he was, he conferred a great blessing upon the timers. For without the tueful implement the otherwise beard. The prehistoric, or some other kind of man, may have out off a free, from when have a maller limb of a tree, from when he amaller the hard in the first set required to invent the boothad, a mallet would be the result. As very few, it may, maliste of the solid in the first three peer preserved, it is impossible to desorbe their condition or shape.

The Maller, --Who invented the mallet may ver be known, says the London Invention,

181

II)INING BUMMARY.

Analors.—Amador Leager, Sept. 7: At this mine in Plymouth, operations are inovitige slong very slowly. The work that is being done it a puzzle to slowly. The work that is being done it a puzzle to slowly. The work that is being done it a puzzle to all mining men. Four men are employed. They all mining met couple of holes go or up feet deep, and dug a bundred feet or so of the trenches about two they have erected no machinesty worth feet deep. They have erected no machinesty worth ing what it all means. We are informed that a great ing what it all means. We are informed that a great moise is being made in London about the Alpine gold minne adjoining the famous Plymouth Composition and the special stress or so that a great in the special stress or so that a great stress of the special stress or so that a great stress or so the special stress or so invest in strock. CALIFORNIA. The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

To more stamps in the Deblin mill. George G. Allen Off New Yorks.—Virginia Enterporter.

Standard S. Or is of the machinery. It is of New Transmitted to the method of New Addition of New Transmitters of the method of New Addition of New Transmitters of the method of New Addition of New Transmitters of the method of New Transmitters of New Trans

Washoe District. MEVADA.

DELHI.—North San Juan Times, Sept. 9: The cleanup at the Delhi mine last month amounted to cleanup at the Delhi mine last month amounted to a few dollare-less than \$10,000. Another dividend of \$10,000 has been declared. Mr. McMurray made a contract with Mr. Colline, the other day to put up a contract with Mr. Colline, the other day to put up of Mceuda City is to turnish the machinery. It is to McMurray's intention to have the stamps in the last machinery. It is to turnish the machines at tunning order by the rat or 15th of Movember at the flushest.

Nevada,

MODIE BOOM,—Esmeralda Mezus, Sept. 10: There will gurely be a mining boom at Lodie ed with unines, will gurely be a mining boom at Lodie ere decape a such as fonce which will surely be a mining boom, and a casepe a guod sei fonce where we will gurely be a guild by the surface of the control of a case of good old-fashioned mining boom, and of a surface of the efficient management of Whi. Itwin, Itwi

DARWIN MINES.—Thyo Andex, Sept. 7: From week, we learn that a splendid strike was made a week, we learn that a splendid strike was made a week, we learn that a splendid strike was made a row was but the strike and week, we learn that a splendid strike was made on the ton. The Lucky lim feet stoo or more to the ton. The Lucky lim ledge is small, but very rich, going from \$150 to 10 to 10

τυλο·

KELTZ MINE.—Calaveras Chromiche, Sept. 7: The Keltz mine is situated about 4, miles east of West who is sky one of the proprietors. The greater part who is sky one of the proprietors. The greater part who is sky one of the proprietors. The greater part from 2,4 to 3 feet, and has been prospected by four thrones, tepping the ledge at various depths, while a part is free-milling. The width of the ledge vertages from the real part is the ledge at various depths, the ledge to obtain the ledge at various depths, and in all, the rock is exceedingly rich. A finh turnion of the ledge at various depths, the ledge too feet, from the resent work. Sixteen men are employed in the present being run to isp the ledge too feet from the mine. Although at present there is no mill on the negative to the concurb, and we dast say that this mine will prove one of the enough in sight, to be worked a number of years, and we dast say that this mine will prove one of the law of the case of property in the county.

LANDE MINE,—Messre, Hobert and Hayward Law binder, and we dast say that this mine will prove one of the sets present and see also should be contain.

LANDE MINE,—Messre, Hobert and Hayward Law binder, and we dast say that this mine at Angels, and are sinknessed been made, and we understand the result is very satisfactory. This mine is superintended by Judge sites in the one. Then monthly cleanup has just satisfactory. This mine is superintended by Judge Hewell,

Innyo.

Innyo. All wells in the result is very framely.

Calaveras.

Mono.

THE GENERAL GRAUT MINE.—North San Juan Trimes, Sept. 95. Thureday of last week the writer made a visit to the General Cleant mine in Sterra made a visit to the General Cleant mine in Sterra county, on the Middle Yuba nyeg. There is a good county, on the Middle Yuba nyeg. There is a good made a visit to the General Cleant mine, Alter partial needs all the way to the mill to with magnetic to the mill to with the mill was never constructed in the part of the Glate. It is a ten-stamp or usualing will was never constructed in the was the mill was the mill was the works of the works of the mill was the works in the mill the mill the mill the machine works in the mill was the works of the mach to construct them it is good took. The eputance to the tunned to buy a double-track trammy. A loaded cat despend the mild the mill the machine works in the mill the machine works in the mill the mill the mill the mill the mill the machine works in the mill the machine works in the mill the machine works in the mill the mill

Sierra. 

Department of the property of the part of the property of the part BIBBER.

San Sernardino.

THE PROVIDENCE.—Greenville Bulleth, Sept. 10: The Open Th

solidated, with a view to get persons to invest in solidated, with a view to get persons to invest in solidated, with a visited this mine at Middle Bar SARGENT.—We visited this mine as mail scale by his good on a small scale by his solidation in the beautiful man before the solidation of the solidat

Plumas.

ning day and night for a long time on various small concursings, At present, S. S. Lucy & Co. are have ing about 75 fores of or curshings. At present, S. S. Lucy & Co. are have live and so or curshing to one of ore crished at the small. The curshing to restend from the mine and also custom of over the crushing to restend from the mine and also constituted from the mine and shown the constitution of such a constitution of such and the constitution of such and the constitution of the company went to the company went to the company went to the company went to the company to the company went to the company to the company went to the company to the company to the company went to the company to company to the company of the company to th

CHETTY CTEEK DISTRICT, BICH ORE, —Silvey Slake, Sept. 8: Phil. Skewes head the Unitatiot.

Josef the Islinish mine at Dun Olen for a month, leased the Islinish mine at Dun Olen for a month, in whith time he and his partner extracted door pounds of first-class ore, which need them \$2x,95 per pound. The Tablesh is owned by a company which has done nothing on the lead for years save to work the annual assessment.

Sept. II: The Spanish mine Grand Transcript, of its late financial complications in good style. A Spanish mine district says that Supt. Its and the manner of the property for the state of the scale of the property of the state of the financial complications in good style. A spendenan from Westing and will to-morrow start it is period of nine months, and will to-morrow start it to turning sgain with a full force of men.

Dan Gien District.

SIERRA MEVADA.—East crosscut No. 2, on the

OPHIR,—In No. 1 winze on the 1300 level 7 feet of good ore was found. MEXICAN.—The north drift on the 1300 level is now in Mexican ground 117 feet.

UNION CONSOLDATED.—The northeast drift, on the 1300 level, is now in Union ground, à distance of 131 feet.

UTAH.—West crosscut No. 5, on the 472 level, is no north on the 472 level, is no mixture of clay and soft-vein porphyry.

BENTON.—Drifting north on the 800 level and Kritckereneovers.—The shaft is being repaired Kritckereneovers.—The shaft is being repaired preparatory to exploring the old 400 level.

Lady Washington,—The north duft on the 725 level is still skirting the vein, and shows no charge of material.

BULLION,—Still drifting east and west on the 300 web, and sinking in the old Buchanan shaft for an

OCCIDENTAL.—Work is being done on the 48, 100, 200 and lower tunnel levels. A small amount of ore is foreig taken out on the too level.

SEGNECATED BELCHER,—The work of repairing and putting in order the drift, in the 1300 level is saill conditioned.

Butting Lail Asieire

BEST. AND BELGHER.—The usual prospecting operations are in progress on the 800 and 1300 levels. On the 800 level the upraise from Mo, 4 crosses us still in quark that gives how assays.

GOULD AND CURRY.—Drifting and crosscutting are still continued at the usual points on the 483 and 800 levels. As go in 194 84 and on the dry and on the fiber fewler. The upraise which is being under the index of the area of the

VELLOW JACKET,—The driff on the 1100 level has been connected with the Imperial staff, and body known to exist in the old workings,

BALTIMORE.—Ore is still being regularly extracted om the 400 level. 'On the 350 level the indications e very lavorable, a strong flow of water having sen found in the west drift.

SCORPION.—On the 300 level the east drift is ad-wanced 710 feet from the shaft, having been ex-tended as leet during the past week. Its face still southures in vein porphyry and clay.

Soon were brough of the minin vertical state.

ALTA,—On, the troo see dritings north on; fair
ore. On the 725 level the winze in the Keystone
vents a down noo leve. The mill is up, and is being
inclosed and rooled. There has been come delay
the mill will be tunning in 30 days.

Crowny Point.—The ore bodies in both the east
the mill will be tunning in 30 days.

Crowny Point.—The ore bodies in both the east
the west vein on the 400 level are showing up
and the west vein on the 400 level are showing up
outlook on the 500 level sill continues favorable.

Scorp for a favorable.

Alpha shaft to a further depth of too feet.

HALE AND VORCESS—On the action level No. 1
wines shows ore of a good quality, and on the 1500
level the south drift from the bottom of No. 2 winze
level the south drift from the other most and
guality of ore will be shipped to the until amount and
guality of ore will be shipped to the until and
EXCHEQUER.—On the ras level drifts are being
ing made behind the old Exchequer shaft. This is
ing made behind the old Exchequer shaft. This is
is being run for att and will give a circulation that
is being run for att and will give a circulation that
is being run for att and will give a circulation that
will permit of actenity good milling one is being decrosscutting.

CHOLLAR.—Much good milling one is being deverse, and the Agoo level or the state of the state
crosscutts on the Agoo level or the state and related
the bottom of the main vertical shaft.

low the bottom of the main vertical shaft.
better the bottom of the main vertical shaft.

In the column of the main vertical shaft.

In the column of the main vertical shaft.

In the column of the one are drifting north on fair

ALPHA.—On the szo level are opening a winze atalon outside of the ore body. At this point bas station outside of the ore body. At this point bas station outside of the ore body on this ore body to examine it at that depth. On the same body to examine it at that depth. On the same body to examine it at that depth. On the same body to examine it at that depth. On the same body to examine it at orbit same made will be tun from their ground. Attangements are being made with the Enough. Attangements are being made with the abolt into the Alpha and Exchequer on the goo and troo levels. Are also a further depth of too feet.

Alpha shaft to a further depth of too feet.

Halls AND WORCROSS.—On the two level No. 1

drift from the bottom of the 600-level winze has been advanced '22 leet, and its face is now in low-grade the state and as ead another be part and as station has been opened at the state and a west drift to the best. The horing of this level temporarily interrupted operations of this level temporarily interrupted operations of this level the work at those points is again going on as usual. The north drift on the segan going on a saudal, and the foot opints in Con. California And Vietna and the foot of district of the control of the control

BRIGHTER PROSPECTS.—Reno Journal, 'Sept. 4; 'The outlook of Cherry Creek is brighter than for some years gat. The Exchequer mine that was a bneavy bullion-producer some years ago, but through was practically abandoned, is now coming out as general depression that cocurinde and other causes, was practically abandoned, is now coming out eggin, and wull contribute its share of wealth to Revada's rapidly increasing product. Some time

LIVELY,—Cor. Sibor State, Sept. 12: Your cor-respondent arrived here a few days ago, and siter a sareful survey of the situation has stronged at the con-clusion that Tuscatora is on the verge of, the great-set boom in its history. There are 9 mines working LIVELY,—Esmeralda Nessa, Sept. 10: Times are lively at Silver Peak. John Chiatovich, keeps his ten-stamp mill steadily running on ore from the Red Mountain mines and builton shipments are regularly made. There is some chloriding done in the camp, and every one about there is making morey.

Tuscarora District.

silver Peak District. MINIME SALE.—Esmeralds "Actor, Sept. 10: J. MINIME SALE.—Esmeralds "Actor, Sept. 10: J. M. Wilke informs us that he is negotiating with New York paties for the sale of the St. George mines, stated in San Antonio district, My county.

This mine was formerly known as the General Lee mines, stated in San Actor, and the control of the top property, at the bottom of whitch the ledge estruction from the will sent to the one is the emilling. Mr. Wilke will start to The ore is the emilling. Mr. Wilke will start to Mew York as soon as he can arrange his affairs in Mew York as soon as he can arrange his affairs in Peansack of the one is the united with will be completed the safe. The Actor of Mew York Actor, and will, at once proceed to New York Prancisco, and will, at once proceed, to New York Thanestoc, and will, at once proceed, to New York Thanestoc, and will, at once an its way to San Prancisco, and will at once at the will said to the some day was an emphasise the safe. He will receive stoom the work of the proceed in the patient of the work of the patient of all booms, may adiable mines that will some day what we was a state of the work of the

### San Antonio District.

CARLIN'S MINING PROSPECTS.—Reno Gasselli, Sept. 10. "The B. and H. mine, located in the Bidch mond mining district, Bureka county, is 18 miles from Carlin, and owned by Bernard & Haill and Mr. Dragoviet, formed by Bernard & Haill and Mr. Dragoviet, formerly of keno. The include is down from two, for lour feet. Showing a vain of from two, for four feet pure white quartz and assays over \$100 for the bure white of this ore were sent to the Gastantial of the Gastal of the form of the f

Richmond District.

The Mures, —Esmeraids News, Sept. ro. The temporary suspension of work on the Belle mine femporary suspension of work on the Belle mine described Muring Company, limited, for the force of substitution of the property of the femorary of the property of the femorary of the property of the femorary of th

Garfleld District.

DLOMPALI T. & M. Co.—Silvey State, Sept. 9:

W. F. Walton, who for many years has been 'interpresentative of the single and the state, and the silven who for many who for many tepresentative of the 'interpresentative of the 'Olompain Tunnel & Mining Co., which purposes developing some gold-bearing leads in El Dorado disveloping some gold-bearing leads in El Dorado district, in the thought Range.

ago Mr. Williamson sold the property to a firm who readed it to the parties now operating it for a nominal and who at once commenced work upon it.

They were not long in establishing the teat that it management have been described in the nearest and who at once commenced work upon it.

They were not long in establishing the fact that it management have brought the mine out and it mony management have brought the mine out and it mony did not come. The mine is one and also though it is under the medium of a shaft. There is considerable waste to come. The mine is and also though the medium of a shaft of the medium of a shaft. There is considerable waste to come, The mine is the work as a shaft of they are machinery handles it without any trouble. The waster was only recently pumped out and they are now employing about 30 men and are youlded they are creabing process. The your transmer work below the strength of the medium of the work and they are now employing about 30 men and are worked by a welf-maining tricker in ane, that it wouth as a closely upon mentifie from a factory this grone by; which also faid die some in it is history this property gave employment to were creabing process. Mr. Williamson the property and collected to were soo men. and it is now being worked audiet the foreign of C. W. Kenny, who was, one of the factory in a factory this factory and it is now being worked tander the factory in the same manner and at the same in the mine system of of C. W. Kenny, who was, one of the property and on of C. W. Kenny, who was, one of the property and on of C. W. Kenny, who was, one of the property and on of C. W. Kenny, who was, one of the property and on of C. W. Kenny, who was, one of the property and on of C. W. Kenny, who was, one of the property and on of C. W. We will such a state one of the property and of seath of the property and of seath and the such as a close of the property, as a time factory and it is strice with the p

strain, Di., Fotter, Rays in the colore, the manager, Di., Fotter, Rays in while were any ordinate of the color of the col

A NEW CAMP.—Reno Gazedi, Sept. ro: Union — In his loty.

A NEW CAMP.—Reno Gazedi, Sept. ro: Union — of Sherwood—is a small settlement of sep opople. The is a new mining diarrier situated shout to miles from Blackburn Station, on the Eureka & Palisade from Blackburn Station, on the Eureka & Palisade to make the comparity of the property of the palisade and is a very promising mining esamp. They have a not of the most to to open great is the country, and so great is the extensive miles in the country, and so great is the extensive miles in the country, and so great is the extensive miles in the country, and so great is the extensive miles in the country, and so great is the extensive miles in the country, and so great is the extensive miles in the country, and so great is the extensive miles and server to be to cotoot and 170-foot ledge, with soo had 150-foot, too-foot and server to the roin. The other so is the few for the palisation of the least in the dump, assays zy ponces in situate to be to fine. The Beal says zy propriets of the whole are under the manager of the few for the palisation, as he speaks very highly of the district and samelter inmediately adjacent to the one now in opter and the few for the few for the contension of the grant in the pass ever been in adjacent to the one now in opter soon and the few few first in the sas of higher a future as any mining every section. This is another good score for the palisation, as he geeting. This is another good score for the miles of the few few few few first in the sas of the district and server been in. Men are flocking increases the supplier and server section. This is another good score for the contension of the district and the server been in. Men are flocking increases and the server been in. Men are flocking there in the server been in. Men are flocking to the content in the server been in. Men are flocking the server been in. Men are flocking to the content of the content in the server been in. Wen are flocking to the content of the content of the

n its history. Union District. HAULING ORE,—White Pine News, Sept. xon a week two teams have been hauling ore to the gram file, which will be started up Thursday. The estabowing in the mine is better than at any time its history.

### Taylor District.

the next titure. There are several other claims here with very illustring prospects. The Independence and Grand Prince miles are being repaired with a view and of Grand Prince miles are being repaired with a view of Grand Independence of Grand British and the people are hopeful and entire the brilliant and prospectual boom is industrial to be an industrial over the brilliant and prospectual boom throughout one and proceed a grood many contemplate of advice. Any of your readers who may contemplate of advice. Any of your readers who may contemplate of advice. Any of your readers who may contemplate of advice. Any of your readers who may contemplate of advice. Any of your readers who may contemplate and before the property of the process of the camp. Any of your readers who may only make any of the process o araylo Queen, Commonwealth, Found Treasure araylo Queen, Which as The Mavajo Queen, which as pposed to be the northern extension of the Mavajo, working but a few men who are engaged in sinkg a shaft to cut the vein. The North Belle lake in

THE BUCKSKIN ORES.—Wood River Times, Sept. 20: The first day of September Christ, John Sept. 20: The first day of September Christ, John Sept. 20: The first day of September Christ, John Sept. 20: The first day of September Christ, John Sept. 20: The first day of September Christ, John Sept. 20: The first day of September Christ, John Special Britannian and John Sept. 20: The Buckskin mine is a manager, on Buckskin seperated and day of the Vienna mill, which is first-class in every respect, happening to be idle and there being a good and astring the Vienna mill, which is first-class in every repeated from the mine to the mill, it was periable to be expected in the mill in was periable on the view of the same location, and only was a spen one, and the ledges cropping nearly the whole days to let let class that the lumb one, and the ledge cropping nearly the whole one, and the ledge cropping nearly the whole one, and the ledge cropping nearly the whole spour on the way to Silver Creek, where he will enget a shour soo feet apart on the same location.

The Jumbo, —Wood River, Times, Sept. 20: Captain Gunn's mines, gives the class on the way to Silver Creek, where he will enjoy a captanny of any of surproced for thurdreds of the Comm one on the way to Silver Creek, where he will enjoy a captann's mines, same to the case and the ledge and the same larger hoods and the larger bear and without cribbing—which is single mines and the larger and without cribbing—which is single and without cribbing—which is so not the case of the chart of the Christian Survey of the Chreek of the Ch

"Accepted when the property of the property of

the main shaft too feet deeper. A contrast has also obeen let us to feet deeper. A contrast has also ere, I he shaft to cank the Cholden Link shaft to deep. A power tall hoisting plant of machineay, including a 40-horse ful hoisting plant of machineay, including a fast been full bosting plant of machineay, including a sayon, bautled to the Chystal mine up Virginia canyon, main shaft of the Chystal is now spo feet deep. The main shaft of the Chystal is now spo feet deep. The main shaft of the Chystal is now spo feet deep. The main shaft of the Chystal is now spo feet deep. The develop this candidate to more rapidly develop this excellent property.

MEXIOO.

MEXIOO.

MEXIOO.

MEXIOO.

MEXIOO.

MEXIOO.

MIDE SI Janos Alics is turning out ore which is morth, scording to the latest seasys, sed per ton. It aliver. Ore is bleing sworth, scording to the latest seasys, sed per ton. It alives to the property of the period of the perio REVIEW.—Salt Lake Widows, Sept. 9: The meek has been a dire solid one of the methy in lively moved to commerce, in demanding move countries on ores and bullion, it is created in the week ending Sept. 9: The coince of the methy in lively move the contribution. The receipts of the methy in the property of the methy of the

### NEW MEXICO.

at not very remained the angle only about 100 yards disgrade,

grade,

PLACEKE.—Philipsburg Mari, Sept. 7: The

Frace,

Frace,

Frace,

Grade,

A BIG STRIKE.—Townsend Transhawl, Sept. 7:

We have direct information of the most wonderfull before the most wonderfull already on or close to the road handless. The hind was made above Eaderstrained of the control of the control of the control of the bed should be already to the control of the pool of the control of the

being hauled. Five carloads of ore have gone out from Hermosa during the last two weeks. This ore within is a light grade in lead and silver has all been whith the last two weeks that they can't compete the subject of benver. What's the they can't compete the subject of subject that they can't compete the subject of the owners of the Pellean-Eagle S. P. Foster, one of the owners of the Pellean-Eagle Store of the owners of the Pellean-Eagle Store of the compets of the Pellean-Eagle Store of the owners of the

PROSPECTING—Jacksonville Times, Sept. 9:

Considerable prospecting is going on in Southern have generally commenced preparations for the season in a lew days. Please ministed learning to will finish eleaning to will finish eleaning to will finish eleaning to will finish eleaning to will be season in a lew days. Please ministed of the season in a lew days. Please officed phase season in a lew days. Please officed will be will b

.HATU

MOTICE.—All our plates are guaranteed to have the full weight of ailver agreed upon, and are tested be lore leaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry.

# JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material, 521 & 523 Market St., San Francisco,

BATTERY SCREENS AND WIKE CLOTH

HYDRO-CARBON ASSAY FURNACES Agent for HOSKINS'

MADE OF BEST SOFT LAKE SUPERIOR COPPER FOR SAVING

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. IN QUARTZ, GRAVEL, OR PLACER MINES.

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

No. 108 FIRST STREET. SAN FRANCISCO NOVELTY AND PLATING WORKS

# PNEUMATIC PULVERIZER

# POWERFUL OPPOSING CURRENTS

Of dry unper-heated steam, so arranged that they continuously charge themselves with crushed or granulated material, and it could be considered to the steam our renated to minerals are desired grainst each other with and purposed, through which principles of the material continuously make the material continuous and surpoyed, through which every minute particle particle of or our materials forces than to become our manual and ores containing rately Gold. Then light weigh and simplicity of cometrories of the pulseriest, the extremely small and inexpensive wearing parts, are the WONDE and SURPHISE of all who witness is operated. The Ompany is prepared to furnish complete plants for pulverising and SURPHISE of all who witness its operation. The Company is prepared to furnish complete plants for pulverising

10 TO 200 TONS PER DAY,

Including a Sectional Steam Boiler supplying all the power required.

# PHEUMATIC PULVERIZER COMPANY.

Write for Particulars. 2 and 4 Stone Street, NEW YORK.

E' V' FOCKENBYCH' gab,r

T. G. CANTRELL,

MOBKS

N. W. Corner Main and Howard Sts., San Francisco,

and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES. CASTINGS AND FORGINGS OF EVERY

IMPROVED PORTABLE HOISTING ENGINES.

# NATIONAL ROCKER QUARTZ MILL,

KENDALL'S PATENT, AUGUST 24, 1886.

CAPACITY, 12 Tone in S4 Hours, 8 H. P. Manufacturers, CANTRELL, Sole Manufacturers,

teralisticulars: The Patentee and Manufacturers cordially invite miners to critically examine and pass judgment upon this improved system of milling and amalgamating ores in the fol-lowing reactionlass.

lowing particulars;

The cost is less than one-hase shemps of same capacity.

S. The trieffir to mino is less to make the capacity.

One-half of stamps.

One-half of stamps.

A. The oper to three its less one-half of stamps.

A. The power to three its less one-half of stamps.

One-half of stamps.

For of stamps.

A. The point of stamps.

B. The stamps.

A. The point of stamps.

A. The point of stamps.

The point of

We challenge competition with Stamps, Ball Pulverizers or any

MARSHUTZ & CANTRELL. before the public machines now



Send for Circulars and Price List.



MHEETS CAR CHIPPED

MEDEL AWARDED, MECHANICS, FAIR. IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

GELATINE-DYNAMITE, Stronger than Dynamite and even Saler in Handing.

OBEL'S EXPLOSIVE GELATINE," which contains 94 per cent of Ultro-Glyce Of Different Strengths as Required.

# 10DSON FOWDER IMPROVED.

FOR EXILEOADS AND LAND GLEARRING. Is from brice so four times stronger under some strong, pulverizes better and ing Power, and is used by all the Gairbach and Gravel Claims, as it bracks more ground, pulverizes better and saves time and money. It is as dry as the ordinary Blasting Powder and runs as treely.



MEW YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President.

THE RUSSELL PROCESS COMP'Y,

By ARE INVITED TO CONTINUE Machinery on test include the TUNNEL ELEGING. For fulling Machinery on test include of the test inquire of the test individual test in the test in the test individual test in the test in the

CONTRACTORS, ATTENTION!

Sectory, Il Stevenson St.

Dynamos and Motors of all sixes for Conveying Power om Waterfalls for use se in Mines and Mills, orected under nareaby of performance.

Office, 40 Meyada Block, action of the second St. San Francisco, Cal.

Electric Reliways, and Apparatus for the Electric Transmission of Power.

Storage Batteries.

MOTORS, LAMPS

Keith's Electric Dynamos,

N'S' KEILH

GILLESPY & CHILDS, 198 Ochitorisco. WALTER C. CHILDS, Glencoe, Calaveras Co., Cal., or of

and Salivation. Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR INSTRA

A. T. DEWEY. W. B. EWER. GEO. H. STRONG. S. F. Telephone No. 658.

OUR U. S. AND FOREIGN PATENT AGENOR PRESENT AGENOR Home Agency over all others, by reason of long establishment, great experience, thorough system from J. S. And Potentiar, by reason of long establishment, great experience, thorough system in our own community, and out inventions in our own commercen and foreign reported from the factor our Agency will have the benefit of an illustration or a description in the Minute And String. The Present of Through our Agency will have the benefit of an illustration or a description in the Minute And String in all countries which great protection to inventors. The latent business, and obtained will list that the best obtained should be seen obtained through our Agency. We can give the best and most retimble advice as to the been obtained through our Agency. We can been obtained through our Agency. We can been obtained through our Agency. We can be now inventions. Our prices are allow as any first-class agencies in the sten of the case of

MIATH

Patent Agency:

Dewey & Co.'s Scientific Press

DEWEY & CO., Patent Agents.

No. 220, Market St.

Elevator 12 Front 5t

# THE GIVNT POWDER COMPANY

The Satest and Strongest High Explosives in the Market.

GIVAL BOWDER OF DYNAMITE

BANDMANN, NIELSEN & CO.,

GENERAL AGENTS, SAN FRANCISCO, CAL. APS and FUSE for Sale,

-basi ni noitateqo ni al

This Mill as a Crusher and Pul-veriser is without rival,

STURTEVANT MILL.

# Metallurgy and Ores.

# SMELTING and LEAD CO. SETBA

416 Montgomery St., San Francisco.

And Assay Office. COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, WANTERANDE OF ....

LEAD PIPE,

SHOT, Etc., Etc.

Under Chamberlin Patent Standard Shot-Gun Cartridges,

# JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

114-118 Pine Street, - San Francisco, We would call the attention of Assayers, Chemists, CHEMICAL APPARATUS AND SUNDRIES, ET CHEMICAL APPARATUS AND SUNDRIES, ET

### NO. 28 STEVENSON STREET, Nevada Metallurgical Works.

Mear First and Market Streets, S. F.

у. А. Гоокнаврт, Мапаger,

Ores worked by any Process.

Ores Sampled

Assaying in all its Branches.
Assaying in all its Branches, Assaying in all its Branches, Waters, etc.
Working Tests (practical) Made.
Pleas and Specifications turnished for the most suitable Process for Working Ores.
Special attention paid to Examinations
Mires: Plass and Renorts turnished.

Mines; Plans and Reports furnished,
O. A. LUCKHARDT & OO.,
(Formerly Hubn & Luckhardt, )
Mining Engineers and Metallurgists.

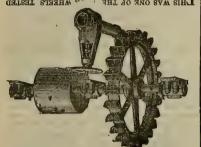
METALLURGICAL WORKS.

S18 Fine St. (Basement, corner of Leidesdorff Street, corner of Le

ying and Analysis of Ores, Minerals and Waters, six Examined and Reported on. Treating Ores by im it processes.

G. KUSTEL & OO., Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE ANALYSE AND STREETS TESTED TANDS WE GEL, and A by the idaho Company as Creas Valley, Gal, and froulars and guaranteed estimates.

A partys—PARKE & LACY, SI and 25 Fremon's Street Assure—RARKE & LACY, SI and 25 Fremon's Street Assure—RARKE & LACY, SI and 25 Fremon's Street Assured to the control of th

INVENTORS, TAKE

uss Market St., M. E. cov. Front (up stairs), San Francisco Experimental machinety and all kinds of metal, the copper and braze, L. PETERSON, MODEL MAKER,

> QUARTZ MILL, Hantington Centrifugal

AT SEND FOR OATALOGUE.

TRAMWAYS.

ENGINES

AIKE KOBE

11GS and TROMMELS. COBNISH BOFFS'

FRASER & CHALMERS,

**ENCINES AND BOILERS.** adrow gaitlems gai

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES



DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

UTAH OFFICM-SALT LAKE CITY, UTAH. MEXICO OFFICE: No. 11 Oalle de Justez, Ohlhushus, Mexico.

NEW YORK OFFICE:
ROOM 48, No. 2 Wall Street.
UTAH OFFICE GENERAL OFFICE AND WORES: Fulton and Union Streets, Chicago, III.

'Samna

MACHINERY,

CORNISH

**ENCINE2** 

PUMPING

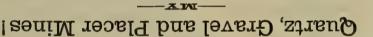
# Mining Turbine Water Wheel. JAMES LEFFEL'S

JAMES LEFFEL & CO.,

or 110 Liberty St., Mew York. Springfleld, Ohio,

FRASER & CHALMERS, General Agents, Ohicago, III., and Denver, Col

COLD MINERS



Silver-Plated AMALGAMATING

HAVE PROVED THE MOST ECONOMICAL AND SDOCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street.

San Francisco Gold, Silver & Nickel Plating Works,

663 and 656 MISSION ST., SAN FRANCISOO, CAL.
E. G. DENNISTON, Proprietor,

NOTICE,—My Silver-Piated Plates are well known and used everywhere. They have proved superior to all others in durability d weight of Silver.

# THOMAS PRICE'S ASSAY OFFICE,

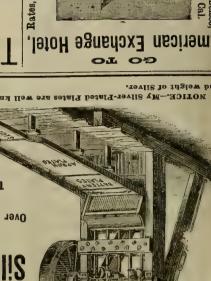
CHEMICAL LABORATORY,

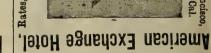
BULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed







hove Hotel is situated in the midst of the Bank-Commercial Houses of the city, and is by far the ome-like and desirable Hotel to stop at

OHAS. & WM, MONTGOMERY, Prop'rs,

### SHAREHOLDERS' DIRECTORY. MINING

		.STM	SHMES	E	SA .				
OTHER	CHA SERAT'S	OTHERNIOS GNA	ONINEE	NT	WDARKINGWENIS	PROM	THURSDAY	OMELPED RABRE	0

7 4q9B	10 20		Lontgomery Si Contgomery Si	M S23	W Havens.	AshavəM TsimiofilaO,		Oon California & Don Dec Blue Gre
PAYARLE	AMOUNT,	R.	DEFICE IN S.		SECRETARY	LOCATION.	MPANY.	NAME OF CO.
	*6	MONTHS	THREE	MIHIIM-	DENDS-	ESL DIAL	LAJ	
22 Jugah	lenaak. Isuaak. Isuaak. Isuaak. Isuaak.		20 Sansome S 1.310 Pine Si Iontgomery S fontgomery S fontgomery S	vī 908	W Pew	A., siarolifsO, T., absvoli W., siar lifsO. T., siarolifsO,	M Co	Alaska M Co Belle Isle M Co Golden Fle: ce C Gray Eagle M C J D Reymert M
.TIACI	MEETING		DEELOE IN B.		VALTAGE			NAME OF CO
_				BE OL S	-			-0
an Cintro Sano	TIT ORO	11 to 11 mm or 100						
ontgomery St	N 605 N 608 H 608 H 608 H 608 H 008	E Kelley.  Morazio  Morazio  D.Coie, D.Coie  E. Luty.  D. Edwarde.  D. Edwarde.  D. Edwarde.  D. Edwarde.  E. Ell. &	G. Lf. 41-8 40-8 40-8 40-8 40-8 40-8 40-8 40-8 40	9 300 2 8 900 13 9 900 2 8 900 2 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	desda, 16. 11. 16. 118. 2. 11. 10. 118. 2. 11. 11. 118. 118. 2. 11. 11. 118. 118	Co C	Grav Eagle M Co., Justice M Co., Locomotive M Co. Maydower G M Co. M. Ex Utah M Co.
elan Building	9ча	J. Gleason.		ef dass. 82	VIUC 00.0	L. OL giarolil	M CoCa	Golden Pleece I
330 Pine 8t.		E Luty		. II 450 8		9 sintotiil		Con Pacific M (
38 enig exe		E Elfiote	D72 450	.01 5029		Nevada. 24.		Con Imperial M
opegomery Be	W 229	Wetzell			30A.ug	32 siarolifa		Champion M Co
ontgomery St	W 608	uxodeO	". Oct 25. L	08 4q98a	50. Ang 2	Netada38	M Co	Best & Belcher
onthomery St		Osborn	J IS dg.S	.at guh7	gucoz	6 surroid	გე oʻU	Bulwer Con M
48 enid 055		M Kent		8 Jq98,.2		"fl. "sigrofil	(Co	Baker Divide M
de enig 725		R Grayson.	AL 45()	.cl 4qe8S.	30.A06	Nevada33		Bouis Con M Co.,
ontgomery at	EV 608*****			# 300 . 4%	3n.60g	NevadaSS		Alpha Con M C
ontgomery St	M 608	Burris	Oct 12, B	3. Sept 20.	Sp. Sp.	MeYada., 32.,		Andes S M Co.
30 Sar some St	ge	, nosbut.	A Sept 22	26., Bept 5,		6 ginrolifa	D G.	Alaska M Co.,
STRIBUSINES	EV. PLACE	BRORETA	1			ON NOITYO	ΓO	COMPANY.
			'S.T	NITTATES!	TOOT "			

# follows: Lehigh, Grade Mo. 1, \$31.00@32.00; Mo. 2, \$31.00@32.00; Mo. 2, \$32.60@21.00; Mo. 2, \$32.60@21.00; Moley, \$17.50@31.00; Grade Mo. 1, \$21.00@32.00; Moley 6, \$19.50@32.00; Grade Mo. 1, \$21.00@22.00; Prorge, \$17.50@19.00; Southern, Grade Mo. 1, \$21.50@22.00; Mo. 2, \$21.00@— "; Groy Forge, — @— \_\_\_

ontidence... on, Imperial, sledonia... on, Pacific... rown Point...

Va. & Cal.

Alcimore.....

Alle Lule.....

Date Con....

Date Tunnel...

Liwer

MAME OF

	t at or near Antioch, in Contra Costa
	s mort thyiers and freight from a
	o., Sept. 10th. Object, to construct a rail-
	IN FRANCISCO AND SAN JOAQUIN VALLEY R.
	erior Court, Department 10, San Francisco:
	thed, and papers filed in the office of the
	re following companies have been incor-
1	

New Incorporations.

er č ys edns

6	(0)	8	(Range)-SNIX	н
_	(O)	48	Flasks, old	н
	Ø			н
		90	Wall stability	н
	0	00	OPTICKSTAVER-BY the flask	н
97	400)	91	Obseroal ver By the flask	н
09	90	94	FINPLATE-UOKe.	н
ÞΈ	(0)	OT	Machinery & Qo.	н
9	œ :	FF.	Machinery	L
9	m.	1 ×	Plow	L
3	8	10	Black Diamond, ordinary sizes	Ł
	8	18	posto monther promote dealth	Ł
22		91	STEEL-English, fb.	н
~	(0)	US	Obilled, do	ł
	(a)	00	Opinjed, do	ı.
-	(a)	08	Sport discount to, on our bast trop, the page, I	ŧ
-	9	8	Sheet. Shot, discount 10% on 500 bag. Drop, # bag. I	ł
09	g Ø	SE.		Ĺ
03				Ł
	20	00		L
_	<b>@</b>	00	Shotts, No. 1.	ш
-	@	09	Clay Lane White	L
00	(0.53	00	Oregon Pig, ton	Ł
00	(635	-	Eglinton, ton. American Soft, No. 1, ton.	П
00	6720)	_	Egünton, ton	П
ñg	CE 35	_	[RON-Glengarnock ton	L
IZ		61	Fire Box Sheels	L
E LG			Ingut.	L
137	@		Annual Commence	i.
	<b>20</b> )		Sheathing	Ł
12	ம	6L	Rolf.	l
			- Hatto	ſ
Eg	@)	G	Armugosa	L
	æ.	29	BORAX-San Bernardino	П
8	20	35	ANTIMONY-French Star	ı
	007 4	OT	THURSDAY, Sept.	1
L	221	a1		1
			A HOTESVIE	

### New York Metal Market.

U7.4	Yellow Jacket.		001 top	write() 38 blune)		
0d.1	Utah			Exchequer		
3.00	Union Con	009		Отоскат		
560	Trojan	00₩	01.2	Cuallenga	100	
DCC	Scorpion	90	09.I	Con. Imperial.	01	
07.8	Sierra Mevada	018	4	Coundence	09	
£1	Savage	98.2		Crown Point		
uc.1	Peerless	0061	₹91@9I · · · ·	Con Va & Cal.		
00.4	Potosi	I50	0p. p	Chollar		
ogg	Peer	069		Bodie		
CZ. C.		OUL		Belle Isle		
01.1.	Overman	096	30. I	Bulwer	120	
\$1	Ophir	099		Baltunore		
9GP,	Mev. Queen.,	500	£3(0) £3	Belcher	0¥6 I	
97.8	Mezican	00₺	09. I	Bullion		
202	Justice	300	4600 d	B. & Belcher.,	011	
997	Julia	09	22 I	Andes		
97	TOWN	000		A168		
06,8	Hale & Mor	00₹	T2 1887.	URBDAY Sept.	HT	
				W0001 400 CO		
.04medo	STOCK KX	008	F'ranois	ngg th gan	RS	
			- 4			

89 07 85 82 0F 09 8 82 02.502,622 02.502,02.502,03

4.05 5.00 3.80 4.25 4.05 4.30 4.40

3.75 4.1: 2.10 4.003.65 4.35 4.20 4.40 3.75 4.1: 2.10 4.003.65 4.35 4.20 4.40

00.8 87.7 .... 00.8 72.7 00.7 87.8 00.0 1.50 1.50 1.50 1.50 1.50 1.50

00.8 08.4 08.4 52.8 03.8 00.8 00.8 00.4 00.7 00.7 00.7 00.7 00.7

Week Week Week Evding Evding Evding Evding Aug. 25. Sopt. 1. Sopt. 8. Sept. 15.

S. F. Stock Exchange.

Table of Lowest and Highest Sales in

05 7 35 1 40 7.75

02. h 00. E 00. h 01. E 03 E 02. Z 06. E 08. E 0 87.7 82.7 87 00.1 87 87.8 00.8 58

### Don't fail to Write.

Should this paper be received by any subscriber to the order of the third of the time of the time of the third of the thir kralian Tin, \$23.40@23 25; Billifon Tin, \$23.40@23 50; Billifon Tin, \$23.40@23 50; Billifon Tin, \$23.40@23 50; Billifon Copper, \$100.00.00; Billifon Copper, \$100.00.00; Billifon Single Speller, Dyford Copper, \$3.76@—1, P. S. C. Copper, \$10.00.00; Ender, \$3.70@3.75; Foreign Speller, \$4.90@4.95; Antimont, \$3.70@3.75.

\$4.90@4.95; Antimont, \$3.70@3.75.

Interest Parces—At idewater, 100-ton lots of listed Markey Speller, 100-ton lots of listed Billifon Speller, 100-ton Billifon Speller

point at or near Anticoch, in Contra Costa county, to a point mear Rogers, in Kern county, to a point mear Rogers, in Kern county, to a point mear Rogers, in Kern county a distance of 380 miles, to run through Contra Cooks, Alameds, Ban Joaquin, Stanislans, Mortesgie, Call, J. K. Wilbur, Timothy Page and L. F. Suyon Land And Theorems, A. W. Starburd, Robert Searches, R. W. Garling, Maryposa Co. Capital stock, \$500,000. Directors, John S. Dietz, Argevine Esyon Murray, Jr., W. W. W. Williams, W. H. H. Ohiok. Berton, Maryposa Co. Capital stock, Rogerne Esyon Murray, Jr., W. W. W. Williams, W. H. H. Ohiok. Carling, Marypon Murray, Jr., W. W. W. Williams, W. H. Chiokert Search S. Williams, W. H. Ohiok. Carling.

ering.

EASTERRY OREGON COALAND R. R. Co., Sept. 12.h. Object, to mine ordinism county, Oregon, and operate railroads connecting the coal mines with the Oregon R. ilway and Maviretoria, C. S. Miller, C. T. Moore and J. S. Trectoria, C. S. Miller, C. T. Moore and J. S. Cochran.

# San Francisco Metal Market.

6	(D)	8								-						ur	uz.	I U +	<b>)</b> —		11%	ш
_	w)	48								133			* * *				DIG	9 1	RE	BL	A	н
-	(a)	90	т	895												,	น้อา	1 4	зже	181	a a	н
	ő	00								. 4 /	400	770	an	0 80	σ.	33	T A	ma.	C H	OI	ñ'n	н
O.F.			.01								-dn	öb.	· · ·	*	٠.,			970	0.1	BUI	őő C	н
97	400	91	9															ex x	320	o of t		н
99	9 @		g												च्य	O.	_	M d	OF.	tan.	CIT.	н
FE	(B)	_OL		***						*		113	3	1.1	7.	.0	n.	å v	OĮ,	Zel	V.	н
9	00	17														٠.	.VI	əц				ı
9	æ,	Ť																		ole		L
-	(O)	18		• • •			• • •	• • •	892	3 18	Δı	ខេច	TP.	to .	ag,	TOI	ng	$\mathbf{p}_{!}$	Ac	હાફ	E	н
22	<b>@</b>	91					• • •			6				.,dt	• घ	BĹ	مري	H-	-7	EE	TB	н
~	0	02	8					- 4 5		10	6,01					4 5	op	'p	Πe	140	0	j.
	(Q)	00	2													• 2	Ba	舟	*H:	ons	7	ĸ.
-	a)	08	Ť	.38	n of	'di	010	т	9	in C	0.0	no 1	по	%n	T T	TIT	00	STU	142	out	8	\$
-	<b>D</b>	8		4 0 1	A CIT			٠.,			- 01	n = .		100					ำล	эų	ã	ł
09			а																	IB;		ì
03	3 8	90	7																			ŧ
	<b>®</b>		9																			Į.
_	9	00	48	Y	200					H						١.	UN	- me	- 1	'mr	5	н
_		09		7***										. 0	4.4	M	91	Y.B.	La	116	Ų.	1
00	(0.23	00	13	3	* * *			ш							OD	4	0 FG	u	0.0	976	,	ì
00	35 0)			•••		•••			-	•••	uo:	ןי ק	œ.	M	.43	05	ц	ES	MA	u l	4	н
09	6720	_				• • • •				•					•••	UG	4 "	uo:	ļuļ	le s	Ι.	н
ng	@35	_	1.	***	400	***	***	***		18	***	· U	co	স্থ	ou.	TAS.	a ur	H.	)	NO	(E)	н
IZ	(0)	6T		4	- 4.+										679	भार	S	201	Ŧ ?	JIL	Ŧ	н
13	(a)	\$2.F		* * *			• • •		• • • •			٠							30	Bu	Ī	L
-	ൈ	ST		***					* * 10			High H				* *	181	mq	B.E	อนุร	S	н
13	w	SE		40,0		. **	0,50		443		.,			**1		* *		•	. 3	105		1
40	0	OF																<u></u> ء	गन	da	οo.	1.
2.0	@)	0																				П
0	(C)	9.0		* * *																		П
8	20	24												pu								ь
	002 (	191	200	Ton		77.7	Year.	^ 17	-			40.7	2	lou	Del.	75	Α	24 ()	24	a alu	-	ı
L	88I '	at.	40	108	V.	ACI																1
								TV														

buyers' and sellers' views. All prompt delivery. Aus-
in on call at the M. Y. Exchange, covering extremes of
Prices generally ruling for metals not regularly dealt
.30.85\$ \$a boue
Tru-Steady at \$22.90@23.25. Transferable notices is-
tices issued at \$4.65.
LEAD - Easy at \$4.55@4.10 spot. Transferable Mo-
ferable Motices (Chili Bars) issued at £40 2s.
ferable Motices (Lake) issued at \$10.65@ Trans-
COPPER-Steady, spot closing at \$10.60@11 00. Trans-
York Metal Exchange Market Report":
The following is the latest by mail from the " Mew
Опіскы гуви—63@54с.
LBAD-\$4,60@4.70.
IROM—No. 1, \$21,00@22 00.
COPPER-LARE-\$10.65@10.70,
BORAX—54@64c.
RVE ZILVER—96∯c per oz. Wew York prices:
Telegraphic advices dated Sept. 15.h give the following

tries, and sir pipes have also to be removed from the funnel holove hoisting the gates at from the funnel before hoisting the gates at the horacle and sir pipes have also to be done while the enlargement of whith county has in progress, will be prosecuted with encay and the utnost. Table the small be prosecuted with encay part the tense, will be prosecuted with encay and the tunnel. This will be prosecuted with encay permit of completed very much before the tense of mining the fall have the permit of extensive mining the fall work.

We can then be sure of a full season's work, before naving our mining works in the riverbed endangered by floods, and will feel warranted in putting in extensive works in the riverbed and angeling our mining works in the riverbed and angeling our mining works in the riverbed endangered by floods, and will feel warranted in putting in extensive works, and force of milete, which will enable us to work force of mileter, which will enable us to work and the stage area of the riverbed during next season.

We have under consideration the utilizing season.

toree of miteers, which will enable us to work season.

We have ander consideration the utilizing at our command, in hoisting and removing to a portion of the vest water-powen, which is at our command, in hoisting and removing itom the bed of the river the bowlders which lates in hoisting and headling the gold-bestring and headling the gold-bestring such season.

Eavel, which must be elevated from the riverly bed and eleopesised in the sluiese. Power will be converted to the river pumps for draining probably for other upurposes.

By putting in a plant of water wheels, and through the medium of dynamo-electric machine to the proper of the probable was proposed. The public of different places and in such a plant of dynamo-electric machine the power obtained to great advantage, it is believed different places on the river, where it may be all at the same time, where desired, and content of our service the vast power to the such and in such a proteable as do convenient form as to enable us to any play its at any point where desired, and convenient into our service the vast power at our compand, and in such a proteable and convenient or and as it is many different places, all at the same time, where desired, and end end its the where desired, and in such a proteable and convenient or one service the various proteases necessary to the such and in such a proteable and convenient or the one of the various proteases necessary to the such as plant is such a many different places, in devising the many different places, the end that we may carry on all our minner generations with the unanner as hervin indicated, to great sincer, in devising the many carry on all our minner as with the utmost dispatch, the concent water-power as with the utmost dispatch. Figure is dispatch.

Example the same frame and the concent as well as with the utmost dispatch. The west desirations.

Example the same frame and the concent as well as with the utmost dispatch. The concent are well as with the utmost dispatch. The concent are sent and man

### Mining Spare Market.

Mining Share Market.

Mining stocks are very quiet, and sales are immiced. The investing public seems to have furned to the character of the control of strong the control of the control of strong the control of the c

\$7,316,822	Total \$1,238,928
871.285,178	Miscellaneou 67,678
1'050'000	St. Louis contest as the costs one
000'568 I	Boston 540,000
Ita,8so,I	
\$1,888,403	San Francisco
to Aug. 31.	de de la company
Jan. I	4. 49.7 (0.00) (3)14.0 (1)

# Our Heroes of To-day.

Delivered by the Author at the Opening Exercises of the Exhibition of the Mechanics' Fair, San Francisco, at Grand Opera House Sept. 1, 1837.

With high lace held to her ultimate star, Whis with bigh lace held to her unutains of gold, Whis with the wonders are, This sew-built world, where the wonders are, She has built new ways from the ways of old,

Her builders of worlds are workers with hands; Her true world-builders are builders of these, The engines, the plows; writing poems in sands Of gold in our golden Hesperides.

A song for these soldiers of peace; and again A-song for the narvels these men blue wrought, Our gleamy anows, and their bredes of grain If untolled as a seroll could record them not. "Preckon these builders as gods among men; I count them orestors, creators who knew The thrill of dominion, of conquest, as when God set His stars spiming their spaces of blue.

A song for the groove, and a song for the wheel, And as rearby song for the runbling ear; But away with the pomp of the soldier's steel, And away forever with the trade of war.

The hero of Time is the hero of thought; ""
The hero who loves at the hero of peace;
And braver his battles than ever were fought,
From Shijoh back to the battles of Greece.

\*IIA

The hero of beroes is the engineer;
The hero of heroes is the chave man't sear.
Whose only tear is the brave man't sear.
Whose only tear is the brave man't sear.

The h-ro we love in this land, teeday

I, the fore who lightens some festow-marks load—

I, the fore who lightens some festom inghway;

Who makes of the desert some blossems on the dead

The Stanfords, the Sutros and the Hallidies, And an hundred more with their names untold-They are kinglier far in their uncrowned ways They are kings with their crowns of gold.

Then huszah! for the land of the golden downs, for the tritten land of the silver horn; Het hertoes have built her a thousand towns, But mever destroyed her one blade of corn.

Oakland, Cal., Aug. 30. 1887.

# The Big Bend Tunnel.

:noitsmrotai gaiw ollot edt gai The Big Band Tonnel and Mining Co (Buffelo, Co., Oal.), of which  $E_i$ ,  $V_i$  Pierce of Buffelo,  $N_i$ , is president, has issued a bulletin giv-



# ELECTRIC DEVELOPMENT COMPANY.

Electric Motors, Dynamors, Transcre, Electrics, Signaters, Signate and all kinds of Electrical Systems for lighting and Form Works, Mills, Reduction Works, Forman For Mines, Hoisting Works, Mills, Reduction Works, Incandescent & Arc Electric Lights.

EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

# No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

NILHO-CP-ACEHINE

# Blasting Powders. ("DYNAMITE" or "GIANT")

Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager. FOR REMOVING STUMPS AND TREES,
HAS NO EQUAL.



# 44 Third Street, San Francisco, Cal. MINCHEZTER HOUSE

This Fire-proof Brick Building is centrally located, in the featived part of the city, only a half block from the Grand and Palace Hotels, and close to all Steamboat and Enlivoad Offices.

Laundry Free for the use of Families.
HERE SHIAS GLOO DIA TOE

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.
PREE COACH TO THE HOUSE,

J. POOLEY.

# ASSESSMENT NOTICE.

South Comstock Consolidated Silver Min-

By and of Divercens, and low to be 28th day of Accade July 1884.

By and of Divercens, and of the cutic per abare was levied and Assessment (Yor. 2) of 10 centic per abare well selected by a parallel intelligence of the Company and the confined per abare from the confined per abare

Manufacturing Purposes. Laboratory NEM LORK' No. 25 Bond St., H. M. RAYNOR,

Practical Treatise on Hydraulic Mining. Mative Platinum and Serap purchased.

BY AUG. J. BOWIE, JR.

# San Francisco Cordage Factory.

Established 1856.

as Rope, Tarred manus.

no, etc., etc.

Extra sizes and lengths made to order on short notice

TUBES & GO. TUBBS & CO, nstantly on hand a full assortment of Manila Rope, Rope, Tarred Manila Rope, Hay Rope, Whale

cleaver with a thickened portion near the back and outer end, this portion being so high up that it will not be ground away in the process of sharpeoning the cleaver.

Laster, Napa Orty, No. 369,004, Dated Aug.
30, 1857. This invention relates to a device needs are constituted to the send controlled to the ends of whillibrees and controlled lines trees and controlled lines where plows, harrows, cultivators, and similar implements are being darwn among the trees. It consists of me clonifer and which the trees are certer, whill a the controlled whillibree, extending along within one end of the whillibree, extending along within trunced to over flanges of the guard, and pressing upon over flanges of the guard, and pressing upon the trace on as to hold it in contact with the control with the one of the estate and of the guard, and pressing upon the trace on as to hold it in contact with the opposite and of the guard and present the ping out. By the construction patented they of the trace of the resear and of the guard and py means of the elastic spring et the from tend, the by the contact with the standard and the ping down when the traces are slack to from dropping down when the traces are slack or for other reasons. The outside ourse, dard mooth surface is ping down when the traces are slack or for other casens are slack or for other casens. The outside ourse, dard mooth surface serves to prevent change and west surface serves to prevent change and west of the case and vines. Cabling and west of the work of the case of Lasher, Napa City. No. 369,064. Dated Aug. TRACE AND WHITEHER GUARD,-L.

of trees and vines.

SPLICING CARLE.—John Collins, Oskland, SPLICING CARLE.—John Collins, Oskland, Selforn of one-half to S. V. Mooney, S. F. No. 369,435. Dated Sept. 6, 1887. This imperent in the art of splicing cables consistent in the art of splicing cables assistent in the art of splicing cables and dispose sites in a novel method of treating and dispose sites in a novel method of the company of the common form of the consistent of the composite and in the splice is well known and the capter in the word of the splice is well known and allowing the place of the soft core previously in their respective ores to a meeting the bound of the opposing and in the splice is well known and allowing the constant of the capter and allowing the orester of the soft of the soft of the capter of the splice is nearly daylows an entargement of the cable. This of she capter of the splice is nearly and the the vicinity. In Collins' improved applies the the vicinity. In Collins' improved applies the the vicinity. In Collins' improved applies the reads. The principle of the improvence on the rote of the capter of each streads meet, while the remaining part of each stread meet, while the remaining part of each, after peing while the remaining part of each streads meet, but the capter of each streads meet, while the remaining part of each streads meet, while the remaining part of each streads meet, but the scape of the capter of each streads meet, while the remaining part of each streads meet, but the forest of the capter of each streads meet, while the remaining part of each streads of the capter of each, after being the of the capt

Our Agents.

Our Farrene can do much in aid of our opener and the scale of practical knowledge and soience, by assisting square of practical knowledge and soience, by assisting squares of coursesing, by including their includence and encouraging knows. We intend to send none of way, between the case of the course of the co

## Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms o subscribed, and give it their own patronage, and give it as as far as practicable, aid in circulating the journal, and making its value more widely known to others, and extending its influence in the cause if faithfully serves. Subscribtion rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. It stready a subscriber, please show the paper to others.

BACK Firss of the Minne and Scientiff Person the bound, and be find of Sper volume of an months. Person wor view volumes 35. Ilescred in Dewey's patent bin or, 56 cents additional per volume.

# Steam Engine Catechism.

L SERIES OF DIRECT PRACTICAL ANSWERS TO DIRECT PRACTICAL QUESTIONS—MAINLY INTRIDED, FOR YOUNG ENGINEERS AND FOR EXAMINATION QUESTIONS.

ROBERT GRIMSHAW, M. E.

This book is intended to answer not only "such direct weekleds more than the server because the server betweeklens chosen with the every waring the readers long search after some point, and enter white the reflected room with the extent of the stream of

INVENTORS. ist of U. S. Patents for Paoisle Coast

eported by Dewey & Co., Ploneer Pateni Solicitors for Pacific States.

From the official report of U. S. Patende in Durart S. 2. Palends Office Library, 2:0 Market St., S. 7.

498 — Header Coupelace Island Best, San dro, Cal. 287.—Stop for Windmilles—J. G. Chap-1435.—Spelicing Carles—John Collins, Oak-Cal.

-Butches's CLEAVER- Frank Kortich A. Cal. STEAM GENERATOR—H. C. Holloway,

90.455.—Bustlu-May Leaman, San Jose, Cal. A., M. Moser, East

oglogat, — perrat - dok.— vr., m., stoser, place oglogat, — free George colesce, S. F. (m. d. Okide, S. F.

### Notices of Recent Patents.

orthy of special mention: Among the patents recently obtained through bowey & Co.'s Scientific Press U. B. and oreign Patent Agency, the following are

EVEL.-George Micolescu, S. F. No. 369, COMBINED TRY SQUARE, SURFACE OAGE AND

Сомвико Нелоев лио Тивлянев Соор-707. Dated Sept. 6, 1887. This mechanic's cool consists of a combination of try-square, our fetores gage, level and plumb in one device. It forms a convenient and bandy tool for a sooren and is suitable for a great many purscess.

OOMEIVED HEADER AND THEASHER COUP-LUG.—Daniel Best, San Leandro. No. 369,. 198. Dated Sept. 6, 1887. The coupling is in-sended to unite the heading and threshing por-sion of a combined harvesting apparatus. It omsists of a triangular tramework hinged to the desping or cutting machine, and having the hinged to the threshing portion of the apparatus hinged to the front side of the triangular trame. A very strong and flexible union is formed be-tween the two parts.

Combined to a superscript of the triangular trame.

Сомвіикр Рісом для Векрек. —В. І., Рагка, гевпо, Ио. 369, 409. Dated Sept., 6, 1887.

This combined apparatus is one by which the found may be properly prepared and the seed from a stone operation. It consusts of a gang from a stone operation. It consusts of a gang how at the seed from the rectangular side to the ravel while the plows are supported from the liagonal beam, the whole traveling upon wheels which allow the plow to be adjusted, and in ombination therewith of a seeding apparatus ombination therewith of a seeding apparatus on himston therewith of a seeding apparatus of the plow and a seeding apparatus of the property of the pr

156. Dated Sept. 6, 1887. This combination Wheel, SEKERATOR.—Henry Olay Holloway, Jilroy. No. 369,405. Dated Sept. 6, 1887.
The object of this invention is to describe a generator of simple construction, portable, so that the may be readily moved from place to place, and adapted to make steam rapidly. In this defence to make steam trapidly. In this defence to make the continue to the free countries of merchoes, thus obtaining the advantages of both systems, and extended a steam of the settion of the free cutting the free cutting the free cutting of the make in thich the setting of the defence the steam of the countries. The box above in which the steam is formed.

Buttle,—May Leaman, San Jose, No. 369,—Buttle,—May Leaman, San Jose, No. 369,—Buttle,—But BUSTLE,-May Leaman, San Jose. No. 369,

1866. Dated Sept. 6, 1887. This compination garment the inventor calls a bustle-skirt. If consists of a pannier and the frame forming the contracts of a pannier and the frame forming the courance adjustably and removably faced with a in a single garment, which is also formed with a fallness at the bottom and rear portion. Withy by which the form of the parts may be adjust by which the form of the parts may be adjust by which the form of the parts may be adjust of the the farment, the appearance of the garment, the corn and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the form and make of the garment will cause the same than a special such a such a

No. 309,400. Dated 36pt. 0, 1650. Internet of the content of the c BUTCHEE'S CLEAVER.—Frank Kortick, S. F. No. 369,406. Dated Sept. 6, 1887. This in-

# Iron and Machine Works.

CALIFORNIA MACHINE WORKS,

WM H. BIRCH & CO.,

WO. 119 Beale St., - San Francisco

ENGINEERS AND MACHINISTS,

ENGINEERS AND MACHI

Brodie Rock Orushers, Bydraulic, Steam Power, Hydraulic, Side Walk and Hand-Po-RI BY ATORS steam Engines, Flour Mill, Mining, Saw Mill and Modging Machin Prodie Rock Crushers.

Manufacturers of B. E. Henrickson's Patent Automatic aleky Catches for Elevators. All kinds of machinery and sud repaired. 

S. Carlonner. ELEVATORS

# **NAION IBON MOBKS**

ROOT, NEILSON & CO., SAORAMENTO, OAL.

Engines, Boilers,

Steam

Front St., bet. N & O Sts., Sacramento, Cal. ng Mills, Saw Mills and Quartz Mills Machin constructed, fitted up and repaired. MACHINERY FOR MINING PURPOSES.

# Golden State & Miners Iron Works,

Marufacture Iron Oastings and Machinery of all Kinds at Greatly Reduced Bates.

STEVEUSON'S PATEUT

Mold-Board AMAL GAMATORS,

Prez St., between Howard & Folsom, Ftg. Golden State Pressure Blowers.

ENGEKA FOUNDRY THOMPSON BROTHERS,

'S and ist beate 3t, between mission and howard, 5.F

MOITHINGER THEY TO REMITTEND TO SHERITION TO

Works, Mo. 315 Mission St., San Francisco.

Is aftention given to Woodworking Machinery,
and Gas Engines. Correspondence solioited. MANUF'RS OF GENERAL MACHINERY

MINING ENGINEERS.

MINING EXPERT AND GEOLOGIST. Oivil and Mining Engineer, W. A. GOODYEAR,

ddress "Business Box A," office of this paper, Sai

ROSS E BROMNE'

NO. 307 SAXBOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

YNATMOD WAS N. W. SPAULDING

CHIZEL BIT diooT bottoch SPAULDING'S

SWES CIRCULAR Z881887

SAW MILLS AND MACHINERY



SHIPPING AND COMMISSION MERCHANTS, JAHW∃N

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Froducts. General Insurance Agents.

Have correspondents in all the chief cities of the United States, Europe, Australia, India, China and the principal interpretation of the Peoific. Furnaments of the China suld sail chairfornia producties in those countries.

Сво. W. Dioria, Мапаует. J. C'B. Guna, Seoretary. H. T. Scorr, Vice-Fres and Treas. General Agents for the Pacific Cosst of WATIONAL ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of London; BOYLSTON INSURANCE CO., of London;

MOBKZ

Location of Works, Potrero. P. O. Box 2128.

BOILDERS OF --Office, 216 Market St., S. F.

Agents of the Cameron Steam dund STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

жетовтз, Етс., Етс. Bolters, Sely-Feeders, ВАВТ НОІЗТЯ, Увитільіліце Рамя, Воск Виелкика, SETTLERS SNV,

VERTIOAL ENGINES, HORIZONTAL ENGINES, AUTOMATIO COT-OFF ENGINES, SHAFTING,

levine M. Scorr, Gen'l Manager,

**NAION IBON MOBKS** TRY OUR MAKE, CHEAPEST AND BEST IN USE,

SHAD FOR LATE CIRCULARS. Successors to PRESCOTT, SCOTT & CO.

SEND FOR LATE CIRCULARS

# HINCKLEY, SPIERS & HAYES, Proprietors.

Office, 270 Fremont St., San Francisco RESTABLISHED IN 1865.1

MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or C mpound, Stern or Side-whoel Engines.

MINING MACHINERY—Holsting Engines and Works, Cages, Ore Buckets, Ore Care, Pumping Engines and Pumps, Waster Buckets, Pump Columns, Air Compressors, Air Receivers, Air Pipes.

Crusbing, Amalgamating Pans, Settl rs, Furnaces, Ret torts, Concentrators, Ore Freders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc. MILL MACHINERY - Batteries for Dry or Wet

MISORLLANEOUS MACHINERY—Flour Mil Machinery, Saw Mill Engines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Whoels.

Tasitavluy s'aitent'

WORKS ORE WET OR DRY.

**ENGINES**BOILERS

OL VII KINDS'

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

OF BUILD Repairs Promptly attended to and at very moderate rates.

Boiler Repairs Fromply attended to and as 1919 modeline Action to And attended to and as 1919 modeline attended to and as 1919 modeline attended to and as 1919 modeline attended to an analysis atten

Corlies Engines and Tustin Ore Pulverizers. DEAUE STEAM PUMP. Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater.

ROLLING MILL PACIFIC

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength toughness and durability to Oast or Wrought from the Ary position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

LOCOMOTIVE AND MARINE FORGINGS. SUPERIOR TO IRON FOR

ALSO Steel Roots, from \$ to 3 inch dismeter and Fletstrom I to 8 inch. Angles, Tees, Channels and other shapes seed. Wegon, Buggy, and Theorie Ties, How Steel, Wagon, Buggy, and Theorie Theories and Special Steel Wagon, Buggy, and Theorie Theories and Metchinery and Special Steel Homes, Theories and Special Steel Steel Special Steel Specialty.

The Steel Steel Steel Steel Steel Steel Steel Steel Specialty.

The Steel Steel Steel Steel Steel Steel Steel Specialty.

The Steel Steel Steel Steel Steel Steel Steel Specialty.

The Steel Steel Steel Steel Steel Steel Steel Specialty.

ist Cicols will be

Office, 43 DEY ST., NEW YORK. Clayton Air Compressor Works,

ROCK DRILLS, NOTXAJO Catalogue No.5, Jan I, 1887,

AIR COMPRESSORS,

YND MALLED FREE ON APPLICATION,

METTS' BUSSELL & CO.,

SOLUTION and WATER TANKS

PRECIPITATING VATS,

**LEACHING VATS WITH FALSE BOTTOMS.** 

Mining Vats and Tanks.

221 & 223 First St., Sam Francisco, Ca JOHN W. QUICK, Proprietor.

San Francisco Pioneer Screen Works,

For Flour and Rice Mills, Grain Separators, Gevulving Sand Shot Screens, Samp Batteries and all binds of Mills, Machinery. Iron, Steel, Copper, Ernes, Incend Milling Machinery. Iron, Steel, Copper, Ernes, Inventer and Cher match purched for all uses Inventer and Slot Punched Screens.

or burred and Slot Punched Screens.

Mining Screens aspenit by Mine, Mont, Steel Steel Steel Steel Steel Milling Screens and Slot Punched Screens.

PERFORATED SHEET METAL

No imitation, no deception, no planished or votten from used, Only genine kness, part of the property of the property of the front part of the Hundry of Relecty Screens on head author for the Hundry of Relecty Screens on head will sell at 20 per cent discount.

BATTERY SCREENS.

GREAT REDUCTION!

SAN FRANCISCO, CAL.

8 California St., and 21 Fremont St.

PARKE & LACY

WELKEBENLED BL

INCERSOLL ROCK DRILL CO.,

For Catalogues, Estimates, Etc. address:

THIRD EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIOUS

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in ENGINEERS, CONTRACTORS,

WINING WEN

NOTICE TO

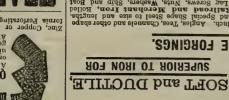
Orders promptly attended to

IZZAEDI

San Francisco.

For CATALOGUES, ESTIMATES, Etc., Address And General Mining Machinery.

Joseph H. Dorety. 529 Commercial St., S. F This paper is printed with Ink Manutsco-furred by Chartis Eneu Johnson & Oo., 500 South 10th 18th, Philadelphile, Branch Offi-ses—47 Rose St., Mew York, and 40 La Salle St., Obitese of Stant for Leb Pseulto Cosset.



Sportpand, Typewriting, Penmanship, Bookk ceping BUSINESS

COLLEGE,
24 Post 8t 8t 8 F
Seed for Careller
Seed for Ca

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

HIGHEST PRICE PAID FOR SCRAP IRON AND STREED,

PORTLAND, OREGON,

BAN FRANCISCO, CAL,

SALT LAKE OITY, UTAH



Machinery

Mining Machinery, Steam Pumps, Wood and Iron Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS.

NOTJEZA

NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

The following parties have these Boilers in use or under construction on this Coast, to whom relating Norks, Valley Water Works, R. Co., S. F., I. 75 H, P. Seby Smelting Works, Vallejo

California Cotton Mills, Eset O., E.

Barnisco Milis, Eset O., E.

Jand

Lat Los Mining Company,

Jand

HEED CAPACITY.

WATER BOOMED THE ENGINE ON THE STATE THE POST OF T Harmony Borax Mining Company, 75 H. P. Oakland Gas Light Co., Oakland.. I 200 H. F. Alameda....

**BOILER**,

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Manufacturers and Sole Agents for the Pacific Coast for Has the Following Advantages:

SAFETY,

DURABILITY,

**ECONOMA** 

L. R. MEAD, Secretary.

San Francisco, Cal.

60,000 Horse Power now in use. AND FACILITY OF INSPECTION and REPAIRS.

Guaranteed More Efficient than any other Boller made. Bollers can de seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Inte Mills, and other places.

REERIGERATING MACHINERY for Steamships, Browerles, and Collers, WILSON'S PATENT GAS-PRODUCER.
STEAM BOILERS of all descriptions.

tron villeys; will not break in transportation 00,000 bots power use in transportation



CONCENTRATORS AND ORE CRUSHERS, Centrifugal Z1JEN7

Mining Machinery of Every Description,

steam Engines and Shingle Machines.

HYDRAULIC PUMPING and Hoisting Machinery.

WROUGHT. HOW WATER PILE & Slocially, More.—Have just completed order for 35 miles of 44-inch pipe of ior 55 miles of the Company, San Francisco.

SYNAM EVGINES—Colles, Silvier Water Works Company, San Francisco.

SYNAM EVGINES—Colles, Silvier Water Works Company, San Francisco.

SYNAM EVGINES—Colles, Silvier Water Works Company, San Francisco.

SYNAM EVGINES—Colles, Silvier Water Water

WATER TUBE

HEINE SAFETY

MACHINERY

First Premium Awarded at Mechanics' Fair, 1884.

Sole Meened Manufacturers of the

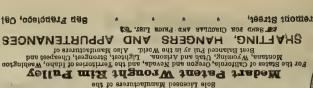
Medart Patent Wrought Rim Pulley

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco, GENEERL MACHINE WORK,

ARCHITECTURAL IRON WORK,

STEAM ENGINES, MACHINERY WINING  $\neg \neg \cap d$ оке сказнек SAN FRANCISCO, CAL. No. 45 FREMONT STREET,

Ice and Refrigerating Machines, Shafting, Pulleys, etc.





Nog. 129 & 181 Fremont Street,

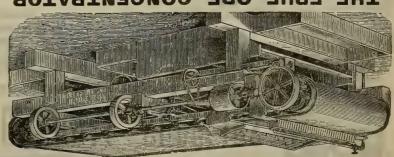
(\$275.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

VAIR! HOO ARE NOOM IN USE. Concentrations are clear from the frest and ready to make tests at \$20 Fremont serves, San Francisco.

Dark Size; —Heaving teaked three of your Frue, Vanners in a competitive trial with other similar machines or desced twenty more of your machines for immediate delivery. Yours fruly, Tours fruly, and the face of your machines for immediate delivery. Yours fruly, Tours fruly, Tours fruly, and the face of your machines for immediate delivery. Tours fruly, Tours, Tours fruly, Tours, Tour THE MONTANA COMPANY (Limited), LONDON, October 8, 1885.

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; Febru-ery 20, 1885; September 18, 1885. Patents applied for. N. B.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 addl tional Frues and more stamps have been purchased.

SAN FRANCISCO, CAL. Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OR VANNING MACHINE. CONCENTRATOR OBE FRUE

and WATER POWER

FIRTH, 18 and 20 Fremont St., San Francisco.



200 Sold on this Coast. Has less repairs than any other Utill. NATIONAL ROCK DRILL.

NEM KOKK'

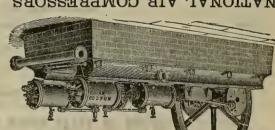


WINEBS, HOBSE MHIW



KNIGHT'S WATER

MILLS, PUMPING AND HOISTING.

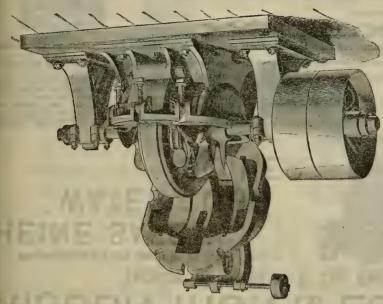


NATIONAL AIR COMPRESSORS.

Over 300 in use. All estimates guar-anteed, Send for Circular.

SINGLE OR DUPLEX, STEAM OR BELT POWER.

EFIZEE-LUCOP



ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of smalgamation may be applied.

4. 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh dry, and from 3000 to 6000 pounds wet.

All wearing parts esaily and cheaply replaced. May be seen in operation at the New York Metallurgical Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, furnished on application.

THE FRISBEE-LUCOP MILL CO.,

HOOKER & LAWRENCE, Gen'l Agents.

Office, 145 Broadway, cor. Liberty St.,

MACHINERY IMPORTERS AND DEALERS IN ALL CLASES OF

SOLE AGENTS FOR

AND BOILERS,
AND BOILERS,

SOUTAL ENGINES,

OLLO SIFENL GVS ENGINES

AND MACHINERY,
TANITE CO.'S EMERY WHEELS INDSON ENGINE GOVERNORS. PICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY,

TYME YND BODIEK SYM WIITS' ING CO'S EUBBER GOODS. DISSTON'S CIRCULAR SAWS. KORTING INTECTORS AND ELEC-

ING' BYINT' ELC' NATHAN AND DREYFUS OILERS

BEMENT & SON'S MACHINISTS
TOOLS, CHINISTS, TOOLS.

MEW HAVEN MANUF'G CO.'S MA-MACHINERY, WOODWORKING J. A. FAY & CO.'S WOODWORKING

Cor, Fremont and Mission Sts.,

PUNES IMPROVED STE BICKLORD'S POWER DRILLS,

BEVINDED MITTING WYCHINE SHIMER MATCHER HEADS. STURTEVANT BLOWERS AND EXHAUSTS. PERIN BAND SAW BLADES.

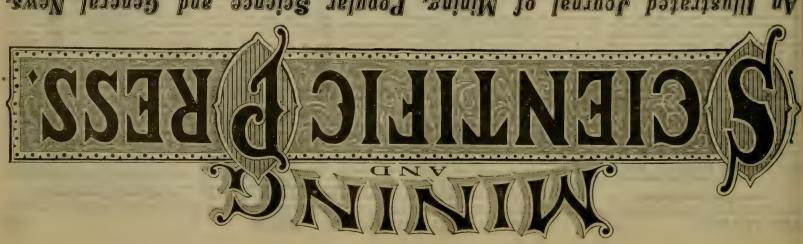
SCHLENKER'S BOLT CUTTERS, HOLLOWAY FIRE EXTINGUISH-ERS, WASSEY'S STEAM HAMMERS REVDUEY COSHIONED HAMMERS TURBINE WATER WHEELS,

YACHT ENGINES.

# ENCINES and

FROM 2 TO 100 H. P., ALWAYS IN STOCK

MILL SUPPLIES AND LUBRICATING OILS.



# Illustrated Journal of Mining, Popular Science and General News,

Митрег 13.

SAN FRANCISCO, SATURDAY, SEPTEMBER 24, 1887.

Dredging for Gold. BY DEWEY & CO.

# Foundry Notes.

of manufacturing establishments in a circuit near the works. They are engaged on several bundled water-meters for the use of the Spring which will furnish electric power to a number At the San Francisco Tool Co.'s shops they have dyname,

street, there is now being built a large Duplex Valley Water Co. in this city.

At the Dow Steam-Pump Works, on Beale

commodations for 200 persons. The shipyard of the Union Pacific traffic and will have ac-Messrs. Knowles & Griffith, and to be completed by May, 1888. The steamer is designed for the feet long and to cost \$200,000. She is to be constructed for shortly commence work on a new steel steamer, which is 240 ready to ship early next week. The Union Iron Works will ne-balf million gallons in Moore of to be sure, 30-inoh low pressure, 12. dinch etroke. It will have a capacity of one and sufficient and sufficients.

nnder construction for the work. won si tasiq edt bas to have it tested by the Government officials. The those of large castings will be those of the supports for the propeller ebam gaied era sacitaraqerq bas has been taken out of the mold, tion as high as the protected deck and the work begun on the outside plating. The steel arear which west recently ose the sector which west research as a respect of the sector of the s the Charleston, the frame of which has been placed in posiemployed in the construction of presents a very busy appearance. Several hundred men are now Iron Works at the present time

materials for the construction of which have all been ordered. The vessel, which will be larger than the Charleston, will be longer busy drawing the plane of Cruiser Mo. 5, the tory in Germany. Several draughtsmen are now There are to be two of these

€ 221,759 совя. tonnage of vessels passing through was about 100,000. In 1882, with new-locks, it rose to 2,000,000 tons, and in the season of 1886 it was accommodated by the Suez canal. In 1855, when the first lock was put in operation, the at Sault Ste. Marie is already larger than that by our internal commerce than the following item which we chip from a western ex-change; The commerce which seeks an outlet OUR INTERNAL COMMERCE.—Perhaps noth-gam enommi ent to so bitester as gai

build the coattle road between the business por-tion of Seattle and Lake Washington, has been arranged for, and the road will be built at THE bonus of \$125,000 in land, which is to

This a lo siead out anoun abam at atmites sidT

without interfering with the working of the mozzle are in opint, while the pump remains stationary, or to allow the dredger itself to pitch and roll of os taiog mort be moved from point to be dredged is made by iron or steel pipes, with se anticient number of lengths of indis-rubber affording a striking proof of the power of the portion being situation between the pump and the ground to be dredged, or fixed on land at be dredged is made by iron or steel pipes, with

the Firanga river, Brazil. The barge is 30 feet by 10 feet by 5 feet 8 inches. The draught is 20 inches. The use, the latest form for breaking up hard from any ordinary depth—say 30 feet—from steam-pump, designed for use in the Salem ground being a very ingenious contrivance of level of pump, and a delivery, through not over (Oregon) Water Works. Its dimensions are as ground being a very ingenious contrivance of level of pump, and a delivery, through not over (Oregon) Water Works. Its dimensions are as tem was recently organized, as stated in last week's Press. We give on this page an en-graving of a machine which is now at work on

THE BALL DREDGER FOR GOLD MINING IN RIVERS.

of over 2000 feet below the surface a vast area of ground which promises to prove fertile gin, and will open up for exploration at a depth Virginia Chronicle, the work of extending the tunnel through under Mount Davidson will beremain with the present management, as the Mortgage held against the property by the Moc Calmont Brothers will be paid up before the close of the current year and the property pass out of the bands of the receiver. When the company's affairs are once adjusted, says the Vivning Chronicle, the work of extending the tliw fearnt orthe Satt to fortnos eat tadt nist

looks the place where gold was discovered in The work will be commenced at an early date. The site is on top of Marshall Hill, and overmade out of square blocks of granite, and as bigh as the \$5000 wolls liw noitsirgorque 0005. decided to erect a granite pile over his grave, THE Marshall Monument Commissioners have

bas suraraque edt ot villidixeh evig ot gaiqiq

after stopping, ready for a new start. The fan of the pump is driven at a high rate of speed by a belt from the engine, this arrangement stones; and, by a novel arrangement in the shape of the delivery pipe, it remains charged foot-valve, which could not work in grit or in 30 seconds, avoiding the necessity of a air-ejector, by means of which it can be started matically. The pump is fitted with a steam by means of special vacuum and pressure-gauges and relief safety-valves working autoof the pipes, when working in sand, is avoided been found equal to going through stiff, com-pact mud and other hard formation. Choking ders; and the nozzle, in practical working, has raised and caused to descend with a smashing force, thereby breaking up the obstruction, unless of such a nature as solid rocks or bowl-

soting as a safety-yalve, as, directly the pump shows a tendency to choke, the belt slips, in-stead of the machinery breaking.

n the Gold Coast, in Brazil, in Sumatra and numinim a se save to worn aminimum of cost. The dredgers have been supplied for The period of period is consequently capable of performing meeting any obstruction, are automatically will be made at automatically and a most a most and a most a most and a most a most and a most a most and a most and a most and a most and a most a most a most a most and a most and a most uch proportion as the operator and broken during its passage brough the pump, and is de-ivered mixed with water in behanoq flew oals at lairetan

t piping, and delivered it to a hight of 10 feet in the proper in- leaves the level of the pump. In another in- of the capabilities of the pumps of various a railway-chair was passed through, sizes, working in moderately loose stuff, the from the Tacoma to the Carbon Hill coal mines. a depth of 6 feet, through 50 feet ised a lump of quartz 8 inches by 6 inches by action as delivery pipe passed a stone 35 action of the piping a plant with 7-inch piping a plant a pl ipes. For instance, a small plant with 24-inch to senote seed of as beturtence os si quing eff. ship to said to see a seed of the seed of ut showing any appreciable amount of wear. ommodates itself to any amount of grit, gravel r stones in the material to be dredged, withstented centrilugal pump with a self-adjusting an, made partly of metal and partly of india-ubbit or other yielding material, which acof the places. In a paraphlet which has been issued by the area are not of the Chas. Ball, C. E., London), it is tated: "The essential feature of the deedger that of the secton is appended) is the use of a which a sleetoh is appended is the use of a secton is appended is the use of a section of which a sleetoh is a special properties.

luicing operations to be carried m where most convenient. The

oump, thereby enabling the

distances (say two or three hun-dred yards) by the force of the

nable depth. The material and of depth of depth

desired position at a consider-lessined position at a consider-ble distance from the pump.

The distance from the pump of th

nr pontoon, as most conven-ent, or it may be erected on and, and the pipes led into the

be placed either on a raft, hulk,

or, and wear and tear are also very small. It requires no spec-ial form of create to carry the dredging machinery, which may have a dredging machinery, which may are

The first cost is considerably sucket drad asse

systancy be gaiwolfor and walked rivers, lakes or beaches, it is

ni blog to streoqeb laivafle

engines are 20-horse power, and the pipes are 7-inch diameter. As a means of working the

A new company to carry out this sysoses. In Australia there are several gold-mining dredges at work, and in other places as

no senidosm Inlessoons on take and should.

And in noistarogo in tug and beyond slees east a first of state and to see the seridos of the ser

The material

## Pacific Coast Anthracite.

world. Many years ago William and Peter risk says: A discovery of coal has been made in the Kootenay district, which promises to prove one of the richest coal measures in the A correspondent of the Victoria (B. C.) Colo-

before the constructing the way of constructing a railway.

Indiculties whatever in the way of constructing a railway.

Marten creek is situated about three miles to the west of the enumit and runs through a the rough of the west of the enumit and runs should be seen that of the north of the north of the result of the creek rises a rounded and steep bill for about creek rises a rounded and steep bill for about west be and somewhat similar bills. It is in these bills that the cosal has been discovered, west to east and somewhat similar bills. It west to east since him if which follows the vest to east a long the trail which follows the construction of the result of the way of the result of the

ment.

Jul. Dawson places the rock at Marten; oonsiders the coal horizon there identical with
that of the Cascade basın to the oreek in the
lowest cretaceous system and north. This hortron has been identified by coal outorops he
tween the latitudes of 51° 30" north and 49°
30" north and shows at different places various

teached.

Teached.

All these seams have been found within a distance of 700 yards and within a bent doubt with these seams have been found of two distance of 700 yards and within a period of two bill these seams will yet be discovered. The course and dip of all the seams are the same, and the strate are remarkably regular and well and the coal has the seams the same tor many miles are similar and the coal has the same a walls are similar and the coal has the same appearance to the eye. It may be described as pearance to the eye, It may be described as pearance to the eye, It may be described as pearance to the eye, It may be described as pearance to the eye with a brittle, but becomes harder as depth is reached brittle, but becomes harder as depth is reached brittle, but becomes larder as depth is reached brittle, but becomes larder as depth is reached brittle, but what has now to be determine the "pricks," with axcellent effect.

There is an doubt about the quantity of coal in sith of the what has now to be determined in single of the describing the "picks" with axcellent effect.

There is no doubt about the oreek and its affluents are found as of irosecone appearance of irosecone appearance of irosecone appearance of its affects and its and its the coal in sith of the scoule of the locality, and can therefore an inspection of the locality, and can therefore an inspection of the locality, and can therefore an inspection of the locality, and can therefore ment.

Dr. Daws and position of the foreign states election of the locality, and can therefore a inspection of the accuracy of the foreign states.

in the on the tot of the tot of the salight mixture of seals.

In the face has been oned a seem, on which the face has been oned as before, and which the face has been of good coal, mixed with here are have free to good coal, mixed with later on the face has been of good coal, mixed with a little shale here and there and the remainder cost and a later of the search of the remainder cost and she remainder cost and she freet, of which the sare pure coal we now descend to the the the walls exposed. It is esem. On this a tunnel has been run in the face of search. On the the face the walls exposed, it is said shale mixed, About 80 feet below the and a she will she feet of cost and shale mixed. About 50 feet below the feet of cost. About 50 feet below the willies is another seam showing raise and shall this and the hand in the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the said on which I2 feet of cost shows shows the respect of cost shows shows the respect of cost shows shows the respect of cost shows shows shows a said shows show

Mot many feet above this is seam 2, on which the face has been opened so as to show the walls. Here there are five feet of pure coallying on two feet of coal, with a slight mixture of slafe.

A short way up the hill is seam I, on which the face has been cleared away to show the consider the state of the state of

In Ruesell's process, silver and coopper have to be one yet offices, silver and coopper have to be one yet officially process, silver and coopper have to be precided and the hole of colour solution and the colour control of the colour colou

world. Many years ago William and Peter farnie of Kookenay were laying out a trail through the Crow's West pass in the Rocky mountains, and while in the neighborhood of the cool so coal and a seam which a pass of some coal and a seam which appeared to be of considerable magnitude.

Some time afterward Dr. Dawson, during his geological survey, found two small seams of coal in the same locality, and in his report he geological survey, found two small seams of gives the assay of this coal, which he described as being a semi-arbitracity of the coal rests, induced Mesers, the spot where the coal rests, induced Mesers, the spot where the coal rests, induced Mesers, the spot where the coal rests, induced Mesers, to take out a coal prospecting license, and to to take out a coal prospecting license, and to botteed. Accordingly, William Fernie, in company with some workmen, etarted for the sace of action last June, and che previously nother the spot with some workmen, etarted for the sace of action last June, and che results will some work of the Crow's Mest pass is 56 to be action last June, and che previously noom-tied. Accordingly, William Fernie, in command sides, and it has a summit which he exception of the Crow's West pass is 56 to be seen of action last of the Crow's West pass is 56 to be some workmen, etarted for the taken of only 4830 feet. With the exception of the Crow's Mest pass is 56 to be said of the cation last bear of only 4830 feet. With the exception of the Yellow head pass, it is the acadest pass is 56 to be said of the condition of the Yellow and in point of a railway to difficulties whatever in the way of constructing a railway.

A railway.

Fernie of Kootenay were laying out a trail

that lead carbonate is insoluble in sodium bypostal fard carbonate is insoluble in sodium bypostal fard carbonates of silver and oupper are soluble, which latter fact was known. Hence, if sodium carbonates is added to a hyposulphite solution containing lead, sellic fated or and oupper, lead carbonate slone is precipited. It is solution of the lead is so complete that sellic in the lead is so complete, that sellic in the precipitation of the lead from sellic that sellic in the solution is the sellic in the sellic in

The Sodium Sulphide Solution.

carbonate.

If lead is to be precipitated by this process, the nee of calcium hyposulphite is not admissible, neither can a calcium sulphide be used for the precipitation of the silver.

in the hixivistion process, is macroly monital.

in the hixivistion process, is macroly monital.

4th. In large mills the quantity of quick-silver in rotation represents a capital of from salver in rotation represents a capital of from ical sequency while the atock of chemical of the process less than one-tenth of this amount.

5th. With Hussell's improvements the percentage of silver extracted by lixivistion is much higher than by smalgamation.

6th. Lixivistion by Russell's process requires a less careful chloridizing rosating, and in consequence a much lower percentage of silve that can be successfully treated by raw smalgamation generally give better regults by raw invitation with extra solution.

7th. Ores that can be successfully treated by raw smalgamation generally give better results by raw lixivistion processing and test of the lost quickeilver, and sentile the more than that of the ober diction.

8th. The value of the lost quickeilver, and sour more in more than that of the open said settlers, ammed in the lixivistion process permits the extension of copper and lead as valuable by-produces.

9th. The sulphides from the leaves becomes

Mr. Russell has discovered a reaction of which I have found no previous record, namely,

The Sodium Osrbonate Solution.

sedium "approach as ilver, silver surpuration in the gold sulphide.

In treating ores raw, the difference in the percentage of silver extracted may be as high as percentage of silver extracted may be as high a with ores that have been subjected to a chlorivity oresting the difference may reach 30 per one.

is employed in the form of extra solution in its employed in the form of extra solution.

The Bactes Solution

It a solution of sogium hyposulphite is added to a solution of sogium hyposulphite, a caray-yellow precipitate appears. This precipitate is a double salt of sodium and cuprous hyposulphite, while the other salt is solution. The yellow precipitate is a namely, sodium sulphate and testarbinoaste, remain solution. The yellow precipitate is only a solution. The yellow precipitate is only solution to practical work, the proportion of copper sulphate to solution. In preparing the exponential of the former salt not less than two one part of the former salt not less than two one part of the former salt not less than two one part of the former salt not less than two one part of the former salt not less than two one part of the former salt not less than two solution for precipitate on the secondary of the cuprous hyposulphite in contain a persolution is the solution trom which he extra solution the part of the extra solution is nade should not contain a persolution of the outprous hyposulphite in ordinary solution exity and dissolving some aliver combinations and silver minerals not solution. It descontinates a very some part of minerals and solution, it decombinates a very solution of the part of the solution of the solution in the solution and the solution of the solution is solution in the solution of the solution is solution in the solution of the solution is solution and solution is solution in the solution of the solution is solution. It dissolves and solution is solution in the solution of the solution is solution in the solution of the solution is solution. It dissolves and solution is solution that solution is solution in the solution of the solution is solution in the solution of the sol

most cases, more gold then amalgamenton. Gromerating the cases, more gold then amalgamenton. Gromeration Goncerning the Schington.—Sodium hyporulphite is the only hyporulphite self-that is the order on a large scale, and it is exclusively used in angle of and the new livinsticion process. In the former case, calcium hyporulphite is gradually introduced into the solution phy user case, calcium hyporulphite solution are case, calcium hyporulphite self-that a calcium hyporulphite solution are cased from gold-bearing alver one serted that a calcium hyporulphite solution are established beyond extracts more gold from gold-bearing alver one self-cased with the confirm salt, but the confirm salt deserves preference in any doubt that this is a service. On the containstitution and the self-cased hyporulphite solution are ledvated temperature, then confaint solution are ledvated temperature, then alphite solution decomposes much most much most much most much a polition and beyond phile. Heated a polition can be used warm without the confaints godium hypocaliphite. Heated in proceed with the order solution. The solution as the case on the solution are betweed the solution as the case on the self-case of the solution. The solution as the case of caustic solution to the contains sulphite solution as the solution as the self-case of the solution as the case of the solution of the self-case of the solution as the case of caustic solution in the contains and solution as the self-case of the solution as a baltic solution as the case of caustic solution as large scale as much as 30 per cent. The self-case of the solution are solution and solution are solution as solu

Supplemental Information Concerning the Solution.

san De done with the san before a san De done with the laborer's Dealth.

12th. Amalgamation is invariably injurious to 12th. In case gold-bearing silver ores have been roacted with eath, inxiviation extracts, in most cases, more gold than amalgamation.

products.

10.th. The sulphides from the lixiviation processes can be much more easily converted into fine pars, and the gold parted, that hallion obtained in smallers.

\*A paper by G. A. Stetefoldt before the Anerican institute of Mining Engineers,

† For the convenience of knose who are not in possesefold's paper on Bussell's improved Process for the Lixivizion of Silver Ores, this supplement is here added,
withing, in as concise a form as possible, the known of the

and in lixivisiting roaceds do ores containing causeand in lixivisiting roaceds do ores containing cause3.4. It produces sulphides free from lead.
4th. It yelds lead in the form of lead car5.1. It overcomes the deleterious effect of a
caustic lixivistion solid or with copper sulphates in
4th alphanic solid or with copper sulphates.
4th lix versions the deleterious effect of a
calcium sale.

Did of the sulphate and sulphates and sale.

In comparing the Russell process with small
capacity of the spinoips litera in favor of lixivision are:

Ist. In amalgamstion, the finens in favor of lixialet. In amalgamstion, the finens in favor of lixithe ore has to be orushed is determined by the
capacity of the settler to work of the sandalet. In favorable and of a coarse sender

the ore has to be orushed is determined by the
capacity of the settler to work. of ocarse sands

alet is an electric of a coarse serves than No. 30 if the
capacity of the settler to work of the settler of

A firether saving se coarse serves appealible is desirable.

But or sliting is done by rolls. In lixivistion

are distributed in the grange. Theis is almost equivant of many to the starter of the lixivistion plant

are distributed in the grange.

A further saving is effected by a reduction in

size of the angline and boilers.

3d. In amalgamstion, the pans and settlers

is much lower than that of pans and settlers

size of the congress and boilers.

3d. In amalgamen and boilers.

A paper by C. A. Esteleidt bene power per ton

consume not less than 13-horse power per ton

one of the original cost of the pans and settlers of mining Experiences.

A paper by C. A. Esteleidt bene power per ton

to the original cost of the pans and settlers of the contraction in the contraction of the contraction in the contract of the contraction in the contract of the contract of

phiés are more advantageously used in the lixi-sarion process than the orders banding calcium. Another detect in the lixivistion process consisted in the investion process consisted in the entership of the ente

Lixiviation of Silver Ores.

The Theory of the Russell Process:

The straction of silver by the lixivitation of silver by the straction of sold of the seed upon the fact that silver chloride is easily solublite, and that silver chloride is easily solublite, and that silver chloride is easily solublite, and that silver contains by solutions by an eigenceration of the hypoenliptic safts. In case the order is also dissolved, a large portion of the latter is also dissolved, lead amphate being soluble in hypoenliphite solutions. If, at the same time, copper is present, and lead, a combine time, one silver, copper and lead, a combine time on the solutions of metals not desirable for subsequent tion of metals not desirable for subsequent treatment. [иимвек 8-соистирер.]

tion on meets in other, so the readenent in the continuation of the continuation of the continuation of meets in the treatment.

Mr. E. H. Ressell of New Haven, Conn., is the inventor and patentee in the United States and several foreign countries of a new livivision process. Mr. Russell has discovered that lead can be completely separated from a sodium approcess. Mr. Russell has discovered by sodium hyposulphites on purified soda-sab, without precipitating any copper or silver. After allowing the solution from the lead carbonate, out precipitating the solution from the lead carbonate alvorating the solution from the land carbonate and copper are obtained from it the precipitant for the sulphides, because any calter and copper are obtained from the first the lead by soda-sah. Hence a sodium sulphide sa the would also be precipited as a sarbonate and in the sarbonate and in the land of the sulphide in the sarbonate and certimental. Sodium sulphide and hyposulphide are more account sulphide sulphide must be some sulphide and process fast and sulphide sulphide sulphid

A Description of the Russell Process.\*

or enonimusid and mort gaissag less to seitilaup

Recent contributions to the Museum of the California State Mining Bureau include the fol-Mining Bareau Contributions.

desired point or points, such as dwelling-house, barn, correl, watering trough, etc.

As there is a heavy presence of water in the well to easing when the cap is closed, the bawes is to heaven.

It cannot be above the tree the presence of a doctor to the proper and the presence of the proper and the presence of the proper and the property of the pr

# Sapphire Mining.

The Jewelty News says: Some time ago a native Mining.

The Jewelty News says: Some time are the stative brunter in Siam found saphires in a remote and scelluded district. Some men who were let into the scoret followed him into the source and brought back to Rangoon and Caloutte a number of very valuable stones. A rush en a sued from give the scoret of the weard of sold of such the stone and desirate the such that the provinces of lattenahoug and sudden fortune, but more to lose their lives the provinces of lattenahoug and Chautah, the provinces of lattenahoug and Chautah the beauty the connected the miner while in Stam.

Being anxious to show some of the genes to the score the Chautah the conceal the chautah the conceal the chautah the conceal the chautah the conceal the chautah the charter of the stones and after a greek dael of cosaring was induced, with many precautions, to give a private or two of the county of several the would probably have not green the spine of the scone; to chautah the would probably have not settlashed to the scone of the chautah the world by the possessors of valuable for the scone of the sco

The New Water-Mill. There is much as of the meyer them to the water-mill of the old Company, near the development of the meyer and about the new water-mill of the beginnering of Choliur abart of the amelgametric place on the platforms, and work on the batteries, and work on the batteries will soon be completed. At a passes of the mill a great pit is being the new which will be placed the heavy stone foundation on which will he placed the heavy stone foundation on which will he placed the heavy stone foundation on which will he be the heavy over this wheel and its gear, and the framework of the mill restricted heavy water wheel which is to be placed on the same and strong foundations of stonework, but there had a strong foundations of stonework of heavy inhore to only will there he needed a strong framework of heavy wheels and clearly well there he needed a strong framework of heavy mill also be needed a strong framework of heavy inhore to support the water-wheel and the strong framework of heavy inhore to ended a strong framework of heavy inhore to support the water wheel and other material and machinery to the util and to the mill whill be convenient to the building in which he one of the flaces, and best-arranged on the hosting worke of the dumped the to the electric Casat. All will move downward from the fine the one of the flame the one of the more and best-arranged on the one of the flame the one set of the slow will which the will be not the mill until the proceed the workman will be tone of the mill until the workman will be soon of a magican in the sines the one is dumped into the one such the mill will will be soon south to the mill will will be soon south the mill will be soon south the sines to elect the south of the workman will be soon south the mill water he seed the drawn of an ownering the sines are drawn will be soon south of the mortar-like wet pulp, the whole of the mortar-like wet pulp, the whole of the seed of the seed of the work while the workman will be soon south of the mortar-like wet

Gold and Shiver.—The coinage of the San Francisco Branch Mirt for the month of August amounts to \$530,000, the great bulk of this, or \$420,000, being in silver dollare. This is the great bulk of this, or silver for the area deliver turned out of this is the Mirt furing the ourrent year of 1887. It is expected that the issue will continue for several more weeks, but may be stopped by orders from in dimes was filled by the coiners during August and the fact of the very heavy extrements, and the sub-like fact of the very heavy extrements, and the sub-like will not be solden out the coiners during to over \$5,000,000, thest is in lare, and out the workman in the dollar coiners, mounting to over \$5,000,000, the sub-likes is in the sub-like will not be entirely delive to the Will was a sub-like will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the mint will not be entirely delivered to the Mint vanite will not be entirely delivered to the Mint vanite will not be entirely delivered to the mint vanite will not be entirely out the entirely of the will will not the entirely of the mint will not the entirel

you an illustration of the manner in which this I send you an illustration of the manner in which this has been done on the great well recently such for the Miramonts colony in Kern county.

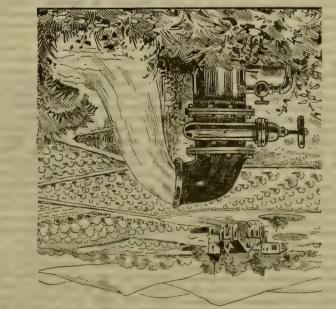
The Minattation shows clearly what is above the ground, below it is arranged, as abown in the ground, below it is arranged, as above the digram, as follows:

In beginning work on the well, a 10 inoh cash of gravants digram, such to the profile to a followed as the following work on the well, in 10 inoh as the following work on the well in the profile in the following the following the following the following the following the following down into the ground 40 feet. Mine feet underground is rivested to the outside of this castronam in the following a castronam in the following the following a sentition of the following a sentition of the following in the feet of the following a sentition of the following and in the feet of the following a sentition of the following and in the feet of the following a sentition of the feet of the following and in the feet of the

Capping Flowing Wella.

qualities of oosl passing from the bitaminous to archraeite.

In cost found at Marten creek is approach. The cost found at Marten creek is approach. At the most southern horizor, and possesses a morthous horizon, seen thank antimotic is now being worked. It is therefore probable that at the northern and southern causes may have been at work to expet the bytrogen from the bitaning one cost of the bytrogen from the bitaning within the distance of the bytrogen from the bitaning one cost of the bytrogen from the bitaning one beam as well and the same exposed along a river shout from the cost of Marten creek. In this social with the latence of 200 feet as in Marten creek, but the lormer are very thin as compared ortek, but the lormer are very thin as compared ortek, but the lormer are very thin as compared or with the late or well and the control of valuable cost will probably be discovered. The successive in this morthous cortainly beconveried. Missing the cost will probably be discovered. Mearten oreels, and when the resilway is brought the pass we may look to warded at successive industry in this drought the pass we may look to ward to an action which have an extension industry in this drought which may have an important bearing on the action wealth of the province. ties. Some of these wells flow as bigh as two and a half million gallons a day, and it is safe so that from them all there is an average terly to waste. This is notably the case in the great artesian belt of Kern and Tulare connwater, for the greater part of the year, runs uting artesian wells. From most of these the There are in this State many hundred flow Written for the Pame by A. Boan.



VIEW OF FLOWING WELL WITH CAPPING ATTACHMENT.

waste of water per day of fully 100,000,000,000,000,000 waster from the oasing gallone.

This water is not only unutilized, but is in its feet, is run a block of concrete eight inches to aronismence of great magnitude, as it coveres large tracks of land, converte the cash it to water water when the conner, the control of the water when the unit water water when the conner, the conner, when the day of this 10-inch casing is a flange and abounds, crosses the roads in innumerable only in the conner, the conner, which the country water water

California State Mining Burean include the following:
lowing:
Cal., from Frof. Wm. P., Blake.
Gold, quartz, very rich in Iree gold, Nevada Gity, Cal., M. Attwood.
Graphite, Bureka, Cal., Thos. Dickinson.
Graphite, Bureka, Cal., Thos. Dickinson.
Two models of the Black Diamond ocal mine, Houte Dishlo, Cal., Wm. Levison.
Two models of the Black Diamond ocal mine, Bolybeate, a very fine specimen of rich sile.
Gold deposited in the rosettes by solfataric total balls lele mine, Elko Co., Nev., Bolton and Co., Nev., Wallenie, large and fine specimen, Arizona, Wallenie, large and fine specimen, Arizona, Wallenie, large and fine specimen of the calculation of the colebrated Mount Morgan mine, Queenstelland, Cal., With specimens of gold from Auriterous gressen, the gold-bearing formation of the celebrated Mount Morgan mine, Black Range Los Burros Dist., Monte Wold-west.

Los Burros Dist., Monterey Co., Cal., Hon., Price Burros Dist., Monterey Co., Cal., Hon., Price Burros Dist., Monterey Co., Cal., Hon., Price Burros Dist., Monterey Co., Cal., Hon., B. W. Twylor.

Los Burros Dist., Monterey Co., Cal., Hon., Price Burros Dist., Monterey Co., Cal., Hon., B. W. Twylor.

Los Burros Dist., Monterey Co., Cal., Hon., Price Burros Dist., Monterey Co., Cal., Hon., B. W. Twylor.

Los Burros Dist., Monterey Co., Cal., Hon., Price Burros Dist., Monterey Co., Cal., Hon., B. W. Trop.

Los Burros Dist., Monderey Co., Cal., Hon., Price Burros Dist., Monterey Co., Cal., Hon. M. W. S. Goodyear.

Platiniradium and spinel, var. ruby from the witeres of the old Charter Osk, Hartford, Con., Sargent.

Platiniradium and spinel, var. ruby from the word war.

Los Burros Dist., Monterey Co., Cal., Hon., Platenies, old Coodyear.

Platiniradium and spinel, war. ruby from the word war.

Platiniradium and spinel, war. wideres of the old Charter Osk, Hartford Co., from Humbolds Co., from Humbolds A. H. Weber.

Bismuties on lite specimens in the Mendocimon of the processed of the proce

SECTIONAL VIEW OF ARTESIAN WELL SHOWING ANCHOR, CASING AND CAP

TRE immigration to this State in the year IRE immigration to this State in the year 1865, and for the first six mouths of several practical over any pravious noise a very large inorcase over any pravious his solution of the state of the st However, when the content of the first of th

places, making travel and transportation both difficults and to all metration, and an inject the difficults and dangerous.

This is not only contrary to equity but to the definition of cast iron to the teacher of the regular eight-inch is as stated the regular eight-inch and it is all quite continues to perceive eight, for the east of the metration is a stream of the metration in the continues to the contract of the continues to the continues t

United States are entirely correct. curate, they are as nearly so as it is possible to make them, and are in no case very far out of the way. The figures here given in so far as they relate to the bullion product of the

### South African Diamond Mines.

a general description of the methods of mining in these dismond-fields, the articles having been from the pen of Mr. Williams. In recent numbers of the Press we have given with his family, to go to take charge of the De Beers mine in the Kimberley diamond-fields of South Africa. Mr. Williams goes out as gen-tral manager under two years' engagement. Gardner F. Williams, for many years identi-fied with the hydraulic interests of this State, left his home in Oskland on Thursday last,

employs about 2000. There are only about 200 to prospect or to work. The trip is a very ex-pensive one. Most of the men employed there are natives, of which the De Beers mine alone are no place for people to go to from here, either to prospect or to work. The trip is a very exground comprises about one acre in extent only. Mr. Williams states that the diamond-fields in the famous Kimberley mine. This piece of evail yeaf areed ed to tant-enim elodw evil you quequoo done T a mon besadoung este barong to quits a suffice to so monition that a bar The De Beers mine is one of the largest in Africa and is valued at about \$25,000,000.

The company have diversed all of the ground in the immediate vicinity, forming one

grace. They are pretty good workmen for the shout four or five days in a week with a good to 300 white men who are mainly contractors, overseers and guards. The Kaffirs only work

runs quite even, and the general average of the diamondiferone material is about as etated. In fact they isld will be 14,000 loads a day, Each load is 16 cubic feet, and each yields, about 14 carats of diamonds, worth say 20 shillings a carat. The ground they will have a hoisting capacity of about other shaft will be sunk 800 feet. - One of these is now down 600 feet. With all the shafts shafts will be sunk to the 700-foot level. is 537 feet deep vertically and 600 feet deep on the incline. Mr. Williams will sink a new staft with two double compartments; these three loads are hoisted in each skip. The shaft running in these shafts, they have been able to hoist 1900 loads in 10 hours, each load consist-ing of 16 cubic feet of diamondiferous material; dends last year, working only a portion of the amine, but they now have all the ground, as stated above. Out of a 5x7 shaft they hoist 3400 loads a day, besides sending down all the material, men. etc., but the present arrangement is very inconvenient. With two small skips is very inconvenient, they have been able to running in these shafts, they have been able to plass of work they do.

The De Beers mine paid \$1,000,000 in divi-

new shafts, almost a whole forest was cutdown, the forests being very small, and the Govern-ment forester prevented any forther cutting on this trace, so that portions of the timber had to No timbers are used in these mines, except in the shafts, timber being very scarce in that country; in fact, in obtaining the timber for the every day, the outpur being very uniform.

convenience for working. claims and made single mines of them, better small tracts. Mow, however, they are owned by companies who have purchased all the small The native workmen, however, find no inconvenience in this, Most of the mines in the Kimberley fields were formerly owned in very four months of the summer are exceedingly hot. that for eight months in the year the olimate is not as disagreeable as many suppose, although bring the water 20 miles, piping it up 600 feet and then piping it down. Mr. Williams stated then by robbing them atterward. A railroad now runs from Cape Town up to the Kimberley mines, 640 miles. Water is brought into the two mines by the Kimberley Waterworks, who England; that is, by leaving roofs and pillare and the same as adopted fin the hematite mines in be secured from private owners. The only system which they have been able to adopt in working this ground underneath is

A COMPANY has been formed to build a dry dook at San Pedro, the harbor of Los Angeles. district has 2,500,000 acres 

gland, the directors, of course, being located in enperintendents included, all come from Enas yet been done. The English, as nausl, have obtained the lion's share of these mines, nearly everything being in their hands. The capital, the machinery, the supplies and the laborers, the machinery, the included all constraints and the laborers. It is too soon, however, to judge of their stay-ing qualities, so little exploratory work having s here, very extraordinary stories are told. of them of large capacity, have to date been erected, the most of which have, since their completion, been running and making satisfactory returns. Of the richness of some of the African Republic, but almost wholly with English capital. Perhaps 20 crushing-mills, some here under the limited liability Act of the South 30 quartz-mining companies have been forme alluvial washings exist here, quartz-reefing, so called, its the industry on which these gold-fields will have to mainly depend. More than the western and southern border of the adjoin- 000,000 per annum. While it is not claimed ing native territory of Swaziland. While some

ico, the Germans and other European residents confine themselves mostly to merchandising, very few of them bothering their heads about with some small interests elsewhere in these vast regions. But these interests count so little, all told, that the ever-slert Briton may be said to have possessed himself of the mines in these south-lying'republics; for here, as in Mextones as outh-lying'republics; to there, as in Mextones the mines in the said to the said of th little toothold in the United States of Colombia, control in nearly all large mining operations, which, it is needless to say, are in these countries numerous and important. During the past to wasts the Morth Americans have got some test parts to the Morth Americans have got some test to the the Morth Americans and the contribution of nodon. In Central and South America the English

to increase rapidly in the future. ightened policy being pursued by that country and the extension of railroad facilities, is likely per annum, a sum that, with the present en-American countries, being also large mine proprietors. The Republic of Mexico is now producing bullion at the rate of \$26,000,000, people sharing more equally with the English the mining industry, the Mexicans themselves, contrary to the usage in most other Spanishmines or mining matters.
Coming north into Mexico, we find here our

yields probably the largest percentage of gold.

Our placer mines give decidedly better returns
than those of Australia, for the reason that
while they are quite as rich, we have more amless cost than in California, though our quartz very marked for some time hereafter. Owing to an abundance of cheaper labor, quartz is being milled in Australia at somewhat undergone a slight increase, and, as quartz operations are now being largely extended, there is reason to expect this increase will be been arrested, the gold yield of the country has and continued so to do for a period of more than 25 years. Latterly this decline having no list of asged silertenA to touborq aoilled mormons output of gold following 1851, the contains an immense extent of goldfields, every-thing is, of course, in the hands of the English. After having for a number of years made an In Australia, which, in its several provinces

being owned exchasively by Russian subjects and largely controlled by the Government. Owing to the nature of the deposits, not much capital has been invested in these mines, they than five or six months in the year. No foreign deposits are rich, but cannot, owing to the severity of the winters, be worked for more ate of about \$22,000,000 per annum. of allavial or placer deposits, are yielding at the ple supplies of water for working them.

The gold mines of Siberis, consisting mainly

addition to the world's stock of bullion \$200,ver; Australia, \$24,000,000, all gold; making the America, \$15,000,000, 60 per cent silver; Mexico, \$26,000,000, all but half a million of it sil-Africa, \$5,000,000, all gold; South and Central this can in no proper sense be called bullion, it is not included in the above total. Europe, \$9,000,000, 80 per cent of it silver; Asis, Si-borist included, \$55,000,000, the most of it gold. 000 of silver. Of the annual bullion product nearly credited to this country, over \$18,000,-000 is composed of copper and lead. But as which \$37,000,000 consists of gold and \$58,000. United States of North America, Alaska and British Columbia included, \$95,000,000 - of world may be set down about as follows: The capital is required for working them. Summarizing results, the gold and silver yield of the leading bullion-producing conntries of the

The World's Supply of Gold and Silver.

duced in Great Britain proper is inconsider-able, a little silver, with still less gold, being separated from the lead and copper-bearing ores bined. The value of the precious metals proent countries than all the rest of Europe cominvested in it and conducting it in more differ operations being prosecuted abroad. Among foreign nations, the English lead all others in this line of business, they having more money most of them are pretty well posted as to what is being done at home, but not many are fully informed as to the magnitude or the altes of metals is carried on outside this country. The the extent to which mining for the precious Few people in the United States are aware of Where and How Much Produced.

have not as yet got these properties in shape for sorusi production, the outlook is considered good. Gold mining is carried on to a limited mines, both vein and hydraulic. While they blog guitarego era seinagmoe dailga fere occupation in Italy. In the south of Spain sev 5000 persons were in early times engaged at this Pliny and other ancient writers, as many however, in only a small way. According to been practiced from time immemorial; latterly, streams that flow from the Alps, where it has amounts to less that a month a man of samonic and the same of the same and the same of the Romans. The annual gold yield of Germany amounts to less than a million dollars, though ducing much gold and silver in the days of the on the continent of Europe is also at the pres-ent time comparatively small, although it was formerly very great, both Italy and Spain proof that country.

The value of the precious metals turned out

and one time or another made the fields of their irrepressible energy and generally well-advised investments. As the dram-beat of England never ceases to be heard, so are her mining poscery ceases to be heard, so are her mining posdia, Africa, the United States, Mexico, Central and South America, Australia, China and Japan have all been invaded by this indefatigable race, gion is so far off, so wild or so difficult of approach as to be beyond the reach or unworthy the attention of the English mining expert, Inreaches out into every land that offers large or even fair inducements for engaging in this branch of mining, London being the central point whence all these cflorts enanate. No regions we are far of an engage of the engage of the control of the gold and silver, the enterprise of that people extent elsewhere in Spain. In no other part of Europe does the product of the precious metals amount to enough to ment special notice.

While the English produce at home so little

tation, drawbacks that are compensated for in tages of a tropical climate and costly transportry has to be carried on under the disadvanfollow, the reefs being numerous, and many of them of good promise. Mining in that coun-them for good promise, the disadennhave there been opened, equipped with plant, and brought into a state of profitable produc-tion, with the prospect that others will soon turns. Mevertheless, a number of quartz mines newal at the commencement of this industry in mew and distant regions, without adequate retry a good deal of money, much of it, as is Although the inauguration of English gold mining in India is of comparatively recent date, there has already been expended in that counbisons continuous round the world.

they were, of course, without owners. The gold mines of India consist almost wholly of baying no knowledge of them except from tra-dition. The English may, in fact, be said to have rediscovered them, in which condition abandoned so long that they were by the present inhabitants of the country forgotten, they These mines, which have been worked in early, perhaps in prehistoric times, had been

district, located on the eastern side of the Transvaal. Though mostly in the territory of the South African Republic, these mines extend over discovered in what is known as the De Kaap but within the past teny years great numbers and rich are soldes are reported to have been known to exist on the Gold Coast of Africa, a number of extensive gold-fields, the principal ones being situated in the southern part of the great peninsula. Auriterous deposits had long Passing over to the Dark Continent we find here ein deposits.



DEWEY & CO., Pablishers.

Office, 220 Market St., IV. B. cor. Front St., S. F. Take the Elevator, IO. in Front St.

Advertising Rates: Terms of Subscription.
Annual Subscription, \$5. New subscriptions will be declined without each in advance. All arrearages must be paid for at the tract of \$3.50 per annum.

Per Line (exelos).

1 week I month, 3 mos. 12 mos. 12 mos. 19 mos. 19

Loudon Acent—Alferd E. Ann, 63 and 64 New Broad

Address overspondence brainess correspondence and Draffs for this paper in the name of the firm.

Entered at S. F. Post Office as second-class mail matter our latest forms go to press on Thursday evening.

SCIENTIFIC PRESS PATENT AGENCY.

Saturday Morning, Sept. 24, 1887. SAN FRANCISCO: DEWEY & CO., PATENT SOLICITORS,

# TABLE OF CONTENTS.

Mining in Myors, 198. Perspective View of Flowing Mining in Myors, 198. Perspective View of Flowing Mining in Myors, 198. Perspective View of Flowing of Akteenment, Sectional View of Akteenment Jesus Perspective Missing and Alley Caping and Caping Massing Events, 198. Passing Events, 197. Pitch 198. Passing Events, The World's Supply of Gold Electricity in Quartz Mills, Milling Ures in Calico District, 198. Passing Events, The World's Supply of Gold Electricity in Quartz Mills, Milling Ores in Calico District, 198. Passing Events, 198. In Caping Mining Mining Burean Contraction of Silver Ores, 198. Passing Alley Massing Mining Mini

Thousans, capture, Thoughes, The Power Re-Tight and Seed; The Rectiest Perpensive Steel with WEOHANIOAL PROCRESS,—The Power Re-Mith Feeulist Features; Per Captist Consumption of Iron and Steel; The Heaviest Locomotives; Corrogated Iron Cases; Will King Iron be Decknoned; Testing Case-tron Pipe; Iron Cars, The American Institute Case-tron Pipe; Iron Cars, The American Institute

Thir, 198.

SOURTIFIC PROGRESS.—Spontaneous Combastion of Steel Particles, The Phosphores The Advances and Sulphese of Lime; A New Telephone; The Advances ment of Science; Color; Mext Meeting; A New Disinferent of Science; Color; Mext Meeting; A New Disinferent of Science; 198.

suppares of Morris Area tappoints, the Advances of Rectard, 198.

# Business Announcements.

Short-Barnette. R. F. Barrett.
Miners Wanted.—S. R. Prentiss, Greenville, Cal.

See Advertising Oolumns.

## Passing Events.

here this winter. While some are simply tour-ists, many are coming here to settle. Califor-nis is now attracting more immigrants than any The first of the overland excursion parties from the East is now on its way to California, Large numbers of Eastern people are expected a feature which seems to be highly appreciated. consequence, has attracted a larger number of visitors. The county exhibits especially form a much better display than ever before, and, in everywhere the exhibits show a marked advance in the material interests of the State. The Mechanics' Institute Fair in this city has The season of fairs is now at its hight, and

dynamos is abundant, there is little doubt that electricity will be used in many places to the great advantage of mine owners. tive power for quartz-mills is attracting consid-erable attention. In the central and northern part of the State where water-power for the column, the application of electricity as a moredions ni biss si tadw mort nees ed lliw aA State in the Union, and as a consequence the vacant spaces here are very rapidly filled up.

cashiers hiding in Capada, women employed se cashiers in banks and mer-cantile establishments; but there are no women esabiers biding in Geneda Honesty in Sex.-There are bundreds of

Electricity and Quartz-Milla.

# Milling Ores in Calico District.

\*094-004 900 fine; Garfield group about 850; Waterlo from the deposits of the King system averages the process. The bullion is of somewhat vari-able grade, but always free from gold. Bullion occurs at a few mines, also copper and mange-tese, but not in sufficient quantities to influence dominate, while sulphides are quite rare. Lead milling. Chlorides and chlorobromides prethe following to asy concerning the process used: The ores of the Calico district are free-San Bernardine county, from which we have quoted in recent numbers of the Prazz, he has In Mr. Lindgren's article on Calico district,

a few test-tubes, with hyporalphite and salphide of sodium. As other ores than obloanade also of the hyposulphite test, each esong ("cabloriders") possessing of the postulphine of the postulp ings being much richer than the coarser part, which again is sorted by hand. Extensive use ore is usually screened at the mines, the screen especially in the irregular deposits in the tuta, where the chlorides occur as thin films on the edf. ,esder in the decomposed rotes. The Sorting the ore is often a very difficult task,

necessary, of course, to work with very thin pulp, so that it may run freely from one pan to

from a few feet to many miles. The only question is that of expediency, when all conditions are duly considered. When the conditions are There is no limit as to eize. The amounts which can be transmitted and distributed extend from a small fraction of a horse-power to

considerable inquiry on the subject. A quartzthis State. In several places already arrange-ments are being made to apply electricity for running mills and hoisting works, and there is most important one in the mining regions of This question of electricity for power is a

that electricity will be furnished to run elebeing perfected to do this on a large scale, so being extended. In fast arrangements are ing run from a central dynamo, and the system

tion of plants ander a guaranty of perform known exact estimates to cost can be made contracts will be entered into tot the erec many hundreds or thousands, and the distances baye its apoolial peculiarities, and as amount of the unine becoming encoceaful, and when it did power available, number of motors, sixes, locations, distances apart, uses, percentege of restructions of power, sixes and lengths of conductors, etc., full particulars must be given before an example of cost of lant can be made.

Milling Ores in Califor Distriction of power of sixes before an example of cost of sixes before an example.

orushing plant with orusher, ooneentrator, Huntington mill, etc., is now being run in the Mechanics' Fair by electricity.

In this city several different factories are being run from a several different sand the greene

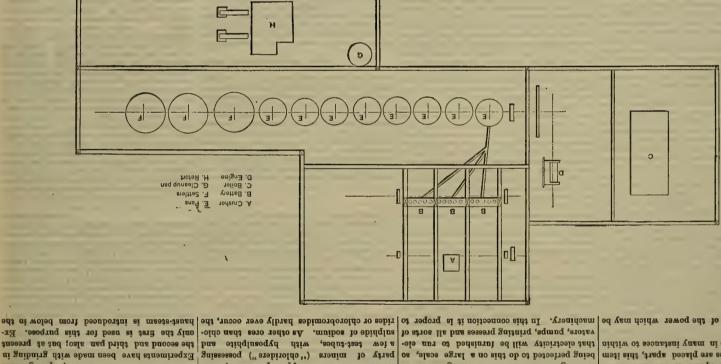
ew miles.

The percentage of the power which may be machinery. In this connection it is proper to rides or chlorobromides hardly ever occur, the

oto hoisting, healing, ornahing, eto. to be put alongside the water-power. The power transmitted can be utilized for drilling, is driven the same as a steam engine would drive it. The advantage is that the mill can be placed without having other dynamo or electric engine, and the mill at the mill, two or three, or more miles away.

The electricity generated in the dynamo at the
water power is conducted by the wire to the wheel at any convenient source of power, this wheel driving a dynamo machine. From this dynamo a wire is carried to an electric motor a sexast eds in ever ewe constant the A service of a service of a service of a service of the se

medi sidt, traqa becalq era senidoam edt doidw nittiw ot seonatani ynam ni ecnataib edt etimil proportion to the equare of the distance at one ognals the interest on teet of steam plant and its maintenance. As the cost of inducting wires for connecting dynamos and motors is in In cases of cheep water-power, as against expensive the cheep water-power, as against expensive fuel of the distance the power may be distance of transmission is unlimited. But precisely it is limited within the power practically it is limited within the power practically it is limited within the power practical transmission is a fuel material transmission is a constant of the chemical transmission is a constant of the chemical transmission of the chemical transmission is a constant of the chemical transmission in the chemical transmission is a constant of the chemical transmission in the chemical transmission is a constant of the chemical transmission in the chemical transmission is a constant of the chemical transmission in the chemical transmission is a constant of the chemical transmission in the chemical transmission in the chemical transmission is a chemical transmission in the chemical transmiss



PLAN OF THE GARFIELD MILL, OALICO DISTRICT, SAN BERNARDINO COUNTY.

it certainly has proved to be a success in the case of the Calico very free-milling ores. It is Attempts have been made to concentrate the comparatively new among the silver-mills of the Pacific alope, and it is not yet proved that the process is practicable with all kinds of oresdeser ores do not yield more than 75 to 80 per mated that the purest chloride ores are worked up to 90 or 95 per cent of the assay value; The disagreeable and costly handling of the practical pulp in the tanks is avoided. The practical application of this system—not the idea—is water from pipes, radially arranged, aid the settling. About 96 per cent of the amalgam is drawn from the first three pans. It is estimated pans and settlers. The advantage is obvious. directly to the first pan from the battery, and from this successively through all the other the remaining amalgam is collected. Sprays of is fed-also by a revolving automatic feeder— in order to clean the quickellver. From the last pan the pulp flows into the settlers, where sides these there is the Oro Grande Mill at Dag-gett with 15. In all three mills the continuous system of M. P. Boss is need. The pulp goes the third pan the last portion of the quickeilver is added. In the fifth pan a little caustic lime of assay value.

Of two mills near Calico, the Garfield works with 15 stamps, and the Barber with 10. Beoharged in the pans at certain intervals. stone and salt, which are automatically dis-\$20 per ton, and often runs up in the hundreds. The mills charge very high prices for treating ores—about \$20 per ton, and return 30 per cent with about ten small buckets filled with blue-55 ponnds per ton ot ore. This is done by means of a self-feeder: a slowly revolving disk former, about I to 14 pounds; of the latter, 8 to the mills, of course, varies, but is seldom below from the sulphide-precipitate. The amount of silver in the ores delivered at er and chloride of sodium are added-of the test is reliable, and considerable skill is often the pans, and cones of all the pans, and a stimating the percentage of silver the pulp. In the third pan sulphate of oup-

AMERICAN BANK NOTE OO.N.Y

bauorg ai qinq edt bas awob tel si relium edt

tions per minute. A little quickeilver is added in the first pan;

diameter of five and one-half feet, and making 65 revolutions per minute; also three settlers eight feet in diameter, and making 20 revolu-

takes place. The pulp in the isolated pan is then pumped out by means of a siphon-shaped steam-injector. There are sight pans with a

others, so that no interruption of the work

thrown out if repairs, etc., are necessary. In the that case connection is established between the

and friction clutches, so that any pan may be from one to another. All are driven directly from the main shalt by means of bevel gearing

conducted directly to the first pan. The pane

orushed per day. Mot water is used in the battery. From the battery the thin pulp is

The battery of 15 stamps (weight 850 pounds, The battery of 15 stamps (weight 850 pounds) fall 8 inches) is fed by the usual Hendy leader, and the pulp discharged through a steer are used per ton of ore, and about 33 tons are used per ton of ore, and about six uses in the country. However, and about an early the country of the country

coarser is first crushed by means of a rock-The ore passes first over a grizzly; the fine falls directly down in the bins, while the

(.gaivargae eeg) , resing.)

onnected that the pulp may flow freely

as the character of aimple vancer; but, as might have been expected from the character might be one of the character are selected are selected.

On account of the high rates charged by the

of the ore, the concentrates are hardly rich enough to pay. Three men are employed in the mill per shift.

frequent attempts have been made to leach the ores by means of hyposulphite of sodium. Sev-eral small leaching works have been erected. tinnone system afterward. The Garfield milite new and differently constructed; the notes regarding it I obtained from the able and mills, and the fact that very large quantities of low-grade (below \$30) ore occur in the district, ent levels, with pans and settlers on differ-ent levels, and have been adapted to the con-The two last-named mills are built on the

> The process is at work at the Ohristy mill. Utah, and arrangements are being made to put it in other mills on this coast. mon mine, Montana, will start up next Monday. The slight increase of water in the Carson river will enable the Douglas mill to start up again. Bernardino county. This is an ore and tail-ings mill. The plant sent to the Drumlumis extending. The Res system of working ores and tailings, which was first applied at the Douglas mill, Nevada, is now in applied several other places. A complete plant was sent last week to the Odessa mill, Calico district, San week to the Odessa was a considered to the Odessa was a constant of the Od transmitted depends upon the efficiency of the state that the use of electricity in milling ores

fictitions value and was a mere speculation notes regarding it I obtained from the abl which lasted as long as there was any hope of lobliging superintendent, Mr. J. F. Hyan. esw moitsroquos guinim edt evedw esso construction was perfectly applicable to ordinary corporations, it did not apply in the pres-Wilson in his decision stated that while that the directors of corporations from paying divi-dends except from the surplus receipts. Judge Section 309 of the Civil Code, which prohibits bne ,268,182\$ of guiffurous shoshivib berslo stitorq sulquus on saw eracht as tacht smislo if betsloiv stotestib ett enim ett mort guisirs \$660,000 with interest from defendant as an ex-director of the plaintiff. The plaintiff alleges that while the defendant was a director it dedefendant for costs in the case of the Excel-sior Water and Mining Company against J. P. Pierce. The action was brought to recover Selling Capital Stock of Mines.—Judge Wilson has rendered a judgment in favor of the

plant must be considered by itself under all the conditions which prevail, and its most economitransmission would cost more than the saving in power would be worth. Each proposed electric-power transmission to egetneered daid a rot bebeen series egral wer is abundant and cheap, a large percent-age of it may be lost economically, because the larger wires are more costly. Therefore, where small (say two or three per cent) by making the wires very large in cross section. But the of the wires connecting the two. This resistant of loss due to the electrical resistance cent of 90 per cent, or 81 per cent, less an ore, the percentage of the primary power will be exhibited at the motor is 90 per which will be exhibited at the motor is nd the motors have a like efficiency. Therevery high efficiency-exceeding 90 per cent-San Francisco, ander the supervision of Prof. N. S. Keith, the electrical engineer, have a dynamo and motor and length and size of wire used. The Keith dynamos, which are made in

As there is a complete absence of objectionable sparks at the junction of brushes and commuta-Generally speaking, accidents excepted, two or three dollars a year will pay the expense of repairs to a 50-horse power motor or dynamo. by a competent electrical engineer. Then it may be thereafter operated by otherwise un-skilled men after a little instruction.

of belivorq sonanstniam bas notourtence les

bor, they wear a long time.
As each proposed electric power plant will

SCIENTIFIC PROGRESS.

Spontaneous Combustion of Steel

The Ivon Age of New York relates a very curious indicates a very curious indicates a very curious indicates which it appears to the transfer of the very factor of the very replicit of very rapidly. The factor of very factor of the very rapidly of very factor of the very factor of the very factor of the very rapidly. The very factor of the very factor of the very rapidly of very factor of the very factor of the very rapidly. The very factor of the very factor of the very rapidly of very factor of the very very factor of PER CAPITA CONSUMPTION OF IRON AND YEARL—While Great Britain consumes about 290 lbe, per annum of iron and steel per head of the population and the United States 270 lbe, per annum of iron and steel per head of the population and the United States 270 lbe, the consumption of the 1,425,000,000 lbe, the sverage consumption of the 1,425,000,000 of people who inhabit the globe only about 32 lbs, but successive in the state of the 1,014,000,000 of people who use less that 2 lbs. of iron per head per annum, 517, 1622, 1632

THE HEAVIEST LOCOMOTIVES.—There has been an interesting discussion among railroad men, both in San Francisco and in the East, as to which were the three or four heaviest locomotives built in this country. A very prominent San Francisco official says the Canadian near San Francisco official says the Canadian near San Francisco official says the Gonadian pounds. It is used to hanl treight through Existing 154,000 pounds. The Southern Pacific has the next largest, weighing 154,000 pounds. The Bushern Pacific as a pounds. The Bushern Pacific has an encomonive on the Northern Pacific of 145,000 pounds. The Bushern Facilian Government had an encomonding the same of the Morthern Pacific of 145,000 pounds. The Bushing 154,000 pounds. The Bushing 154,000 pounds.

and its cause would have been "unknown," the Phosphorescuce or Sulthate of the cause of the phosphorescence of authate of the cause of the phosphorescence of authate, in order the case of the phosphorescence of an a violet phosphorescence, it is sufficient to calcine a mixture of phorescence, it is sufficient to calcine a mixture of 100 parts of cockle shell lime (Hypopus 2014). Out the phosphorescence when mixed with these arbaites of cockle shell lime (Hypopus 2014) of 100 parts of cockle shell lime (Hypopus 2014). Out the phosphorescence when mixed with these arbaites of being a cockle shell lime (Hypopus 2014) of 100 parts of cockle shell lime (Hypopus 2014). Out the continuation of the cockle lime of the cockle lime of the cockle lime (Hypopus 2014) of the cockle lime (Hypopus 2014). Out ascertained that a fine phosphorescence could be obtained by adding to pure carbonate of phosphorescence at once to the bismuth salt, the ordering prepared with cockle lime owes its vivid phosphorescence at once to the bismuth salt, the corporate of all ments the foreign substances which analysis of lime the foreign substances which analysis of one of the ordering and see salt to give the assalt of calcium phorescence at once to the maximum brights of lime seems to contain a sale of ot sale and see salt to give the maximum brights of seems at once to the maximum brights of one of sale of sale of ot of the analysis of the contains and see salt to give the maximum brights of seems to contain without coloring is able to reader the later phosphorescent. CORRUGATED IRON CASES.—Casks made of corrugated and galvanized sheets are now becoming the transport of the transport of inguise and galvanized sheets are now becoming injudied which are liable to expand considerably with a rise of temperature. They are lighter than wooden ones, and last much longer, lighter than wooden ones, and last much longer. The corrugations of the sheets urn parallel with the hoops, which are either iron bands lined with wood or fron fabric the bung and spliced, while the bung and spliced and soldered, while the bung and spliced bolds are provided with serew plugs. They can stand an internal pressure of 30 pounds to the seare provided with serew plugs. They have stand an internal pressure of 30 pounds to the standard an internal pressure of 30 pounds to the standard and internal pressure of the seare provided are now being used for the and quite recently also for beer.

WILL KING IRON BE DETREMENTED?—An eminant scientist prophesies that iron, which is now anch an indispensable condition of all manufactures and commerce—the foundation of all increased commerce—the foundation of all increased chain of social intercourse which keeps grand chain of social intercourse which keeps are need together, will eventually be determed, and another will sake its place. This prophet holds that iron will be "as completely superseded as has been the stone of pletely superseded as has been the stone of the Aborignes." What is to be its successor?

TESTING CAST-RON PIPE.—Cast-iron pipe oan be tested for unequal thickness by being rolled slowly over level stitle by a single operator. Tolled slowly over level stitle by a single operator in the test position to get away should be allowed, in fact, be sided in, the bendency. The best place to do this is in the the upper state of the importance of this were the tipe factory, before the upper sample into the test path, and if the importance of this were the large of this world be done.

IRON CARS.—Some hundreds of railway care, almost wholly of steel and iron, are being built in England for Hindostan, in the expectation that they will prove less perishable in that climate they will prove less perishable in that climate they will prove less perishable in that climate than care of wood. The time will soon rail saids from upholstering which will be employed in the manufacture of all first-class care.

Tur American Institute Fars.—Hectrical machinery will be the chief feature in the next fair of the American Institute, in New York City. The principal manufacturers of electrical appliances in this country have promised to appliances in this country have promised to appliances in the Third rate almost half of the space in the Third avenue building. No prizes will be offered.

instance, 700 pounds of cosl are required to melt 500 pounds of metal by the present processes. Now in those 700 pounds of only 256,000 heat units, and yet only 256,000 heat units are required to melt those 500 pounds of metal. Here is a waste of nearly 10,000,000 heat units in one obarge of the turnsce—all gone up the chimney, completely squandered. Thus 97 per cent of the heat value of the oaal is wasted. This should be stopped by a resort to gas, or This should be stopped by a resort to gas, or greatly reduced by more improved processes for but of the total. The Power Required for Modern In-MECHANIGAL PROGRESS.

High they work that the state of the process of the state A LOCOMOTIVE WITH PROULIAR FEATURES.—
The Hinckley Locomotive Works, Messcabnsetts, are building an averses locomotive with a
single pair of driving wheels. It is intended
to use it on the "Flying Yankee" hash train to use it on the "Flying Yankee" hash train which runs over the Boston & Maine and
Maine Central roads. It possesses many peoulist features that are experimental. All the difffoulty of slipping drivers can probably be overcome by the use of the sand blast now successtally used on many English roads and underginey trial on the Chicago, Burthngton &
Quincy. The sand being thrown on the rail
before the wheel reaches it. Experience in
England goes to prove that the sand supplied.

If dry and delivered fairly on the rail close to
the dry and delivered fairly on the rail close to
the dry and delivered fairly on the rail close to
the dry and delivered fairly on the rail close to
the dry and delivered fairly on the rail close to

dustries.

Western Electrice Street. WITH ELECTRICITY.—The Western Electricians reports that she sold your partitions of sold burnt under the sold your estimates the shop of the Sedgwick Mainspring Co., 19 and 21 South Caral street, Chicago, can be seen a very interconsists of tempering watch springs by means consists of tempering watch springs by means of the electric current. In one part of the room, to stand the room that is the room. The conductors connects with the stand the room of the chart to be conductors connects with property of the purpose of the plue color, to the purpose of the che blue color, the purpose of delicate process of tempering from hereing the room in different pieces of the purpose of color of the purpose of doing the whole world selective current se witch and color before it is the from the room of color of the steel does not there can be color of the steel does not stand the purely mechanical pieces of work. Therefore, the purpose of doing the whole world selective current se with a fire, the offering the whole world selective current se with a fire, the purpose of doing the whole world selective our to the purpose of doing the whole world the process of tempering from percentage the offerent mechanical pieces of work. Therefore, with the steel does not there time, the purely mechanical pieces of tempering from becoming a selective the steel does not street the outleting the the steel does not the purpose of the purpose selecting the steel does not work. Therefore, it is build the selective the selection of the steel does not street the selection of the steel does not street the selection of the steel does not street of torn in one of the selection of the steel does not the steel does not street of torn inches as a street of torn ton

THE FUEL OF THE FUTURE—ENORMOUS PRESEEVAT WASTE.—At the late semi-sunual meeting of the Ohio Institute of Mining Engineers, held
at Portsamouth, a paper was read on the subject between the subject was read on the subject by the olivenses of ''(des Fuel,'' by E. AoMilliu, which was listened to with deep interest. He discussed the various kinds of gases, their uses, the processes tion of the principles he held. He exhibited a sesses of production, and made practical sphicestries of the charts, showing various processes of producting gas. As to the extra processes are the control of producting gas. As to the said, counting the mature was the producer gas, or rather gas 29 and year lates the literated at length the cost of the united would be producer gas, or rather, a faire of the united would be producer gas, or rather, a subject sead its used at literate and its uses, and went minutely into an interesting leature of the paper was the clear. A very this and its use of said was next to criminal, in the pudding furnace was next to criminal, in the pudding furnace was next to criminal. In the said the subject of the control gas for metallustic to the criminal. In the subject of the control gas for metallustic to the interesting leature of the paper was the about the said in too the control gas next to the subject of the control of the waste is enough. For the control of the control of the control of the waste is enough. For the control of the control of the waste is enough. For the control of t

The American Association for the Advancement of Science, which recently met in Mew Moran ment of Science, which recently met in Mew York, numbered 731 persons present, of whom years. The papers offired were S72 in number, of which 256 were read before the several sections, of which the meet meet and practical papers the meet set of practical papers read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the read was by Prof. W. O. Atwaster, on the the control of the second of the the moral papers and peat adapted to day at the control of the second of the profession of the second of the profession of the case of the protein in the latter form of the control of the cases is the waste of beef, and the second of the west of beef, and the case of the west of beef, and the case is the waste of beef, and the case well. Peaver the or of the west of the poor, but the poor wery great. The physiological waste is still two ones and drinking that each meet in the foreing and drinking that each of the west of seeding the in health and in puller in the best of the west of seeding the in the best of the west of the poor of the west of the to this discovery of the great distance an econed or his discovery of the great distance an econed or reverberated sound will carry and the distance or reverberated sound will carry and the distance the same innamental note, would vibrate and the same innamental note, would vibrate and produce the phenomenon known in acconetics as to not instance they work their winds as carried on between persons four and a quarter miles apart, from the not distance of their windows or on their process a mile away conversing in an ordinary porches a mile away conversing in an ordinary conversation and admitted that such had taken of instance they were told the nature of their conversation and admitted that such had taken be distinctly place. By listening to the whistle of a train, place. By listening to the whistle in their members and beyond Fermbank to and beyond fermines and tracing it to and beyond fermines thad a well-defined range of 26 miles; that is, a loud sound like a locomotive whistle from. Conversation was readilable than in the trumpels was even more available than on list of the Onic river, about four and one-half that the trumpels was even more available than on list. The instrument will be patented as soon as perfected. A name has not yet been curious as perfected. A name has not yet been contious and valuable devices, both electrical curious and valuable devices, both electrical and mechanical, but none as curious as his sea and mechanical, but none as curious as his sea belephone. The Advancement of Science,

NEXT MEETING,—The next meeting of the Advancement of American Association for the Advancement of Meeting in Mey V. P. W. Powell of Washington, D. C., was chosen as president at the late meeting in Mew York. There was also the neural election of other officers for the association and for the sections. COLOR.—All that we know of color, its causes and effects, is in connection with the wave the and effects, is in connection with the wave the color depends upon the number of light, Color depends upon the number of light waves reflected from any object implements of light waves reflected from any object implements of the eye, In red there are shout 40,000 waves to the inch, and violet there are 57,000 waves to the inch, and violet there are 57,000 waves to the inch, and violet there are follows of pulsations per section of millions of pulsations per section. The other colors have wave lights interpretation of the colors have wave lights interpretation of the colors have one of a fleen a desert there can be no appearance of a flee an effect. There can be no appearance of war at desert stance. The chemical process called combustion island where there is no eye within seeing distance. The chemical process called combustion that force is no eye are not a desert sance. The chemical process called combustion of an eye. Color-blindness is peculiar to some of an eye. Using the fame of an eye. Using the interpretation of an eye.

A New Telesthone, of which mention has already been made in these columne, is alluded to obsen made in these columne, is alluded to by a Cincinnati writer as follows: At Ferral bank, 10 miles from this city, are the workshop and laboratory of Harvey B. Cox, a young electrician, who, though known but to a few received to prove efficacious in rectifying his is a ground Europe by which he is a sprolific and in the foundations, in which he is a sprolific and in the insurance in the content of scientists and in the insurance in the content of the latest device is a free from the content of the latest device is a framework to be used for telephoning at eas or clearly and in the latest device is a framework to be used for telephoning at eas or clearly and in the latest device is a framework to be used for telephoning at eas or clearly and in the latest device is a framework to be used for telephoning at eas or clearly and in the working to the latest device is a few or the latest device is a latest device in the lates

Linderman, member of the club, fell to the share of Meetra. Taylor and McClavin, and for us it remainest not to repeat all the nice things said by the ladice ament the winner—and their opponents I

## Use of Toilet Soap.

The opinion their such as the early thouse the early the elite, and the elite, as well as its unotent of the elit, as well as its unotent electron, or the oil of the elit, as well as its unotent elity of the elit, as well as its unotent elitor the elitic on cannot use too unote, as the elitic as the elitic as the elitic of the elit, as well as its unotent elitor to the coll of the elit, as well as its unotent elitic the elitic on cannot use too unote, or the oil of the elit, as well as its unotent elitic the elit, one cannot use too unote the unit of the the thin counties of elitic property. Out of the 7,000,000 porces through elitic the elit of produce fatal and elitic the elit of produce fatal and elitic the elit of produce fatal and the elitic the elit of the elitic the elit of energing the elit of elitic e

### Health in California,

Southern California, in Osliflornia, Southern California is not the only part of the State which is noted for the health-productive State which is noted for the health-productive State State Board of Health well observes in his ingust report, that "lift reports of prevailing August report, that "lift reports of prevailing anisates are to be taken as fair evidence of the anisaty condition of a State, then California must be considered just now the Incom. Mearly 100 different localities have been heard from, comdifiered to continue and otices in every county, and not one amountees that any serious disease is prevailing."

The total incompletion of \$82,500, wes not one amountees that such the match to contain a population of \$82,500, wes tree outside of san population of \$82,500, wes match to contain a population of the most unclearly contain a population of the most unclearly all these cases were of those who had deaths reported nearly one-sixth were from condeaths reported nearly one-sixth were from condeaths reported nearly one-sixth were from condeaths reported nearly contains among the disease rarely contracted here. Where we had not been beat the contract of the deaths reported nearly non-sixth were from contone here with the disease rarely contracted here. Where is not one than the contract of the con

rety—districts and for which the climate is in no way responsible.

Tesponsible.

The moxt in order is diptrheris, which, unite chis disease in the East, is never spidemic face, this disease in the East, is never spidemic face. In this city last month there were 61 like San Francisco is to isolate the cases as as to prevent the spread of the disease, it is now well testablished that diphtheria and member stanous croup, which are substantially one and breast and member same disease, and is communicated by proximity and disease, and is communicated by proximity and leasen by contact the same disease, is the most contagious of all families where it is impossible to isolate the least the he is a parten of the laws of the claws of the disease. Hence it is generally more detailed that the disease. Hence it is generally more detained that is and bence, it come extent, then else the disease. Hence it is generally more destended by the contact of the spread of the disease. Hence it is generally more destended to the contact of the spread of the disease. Hence it is generally more destended parts of thies than else trongers, and hence, to some extent, the prevailing error with regard to its necessary connecting in gerror with regard to its necessary connecting and page of a spring connective many and the sease of the spread of the many connection with detective sewers.

we give the following from a Georgia stand-point: "I have tried several methods of keep-ing sweet poetstoes in the winder. The best of illing the interstices between the postatoes with filling the interstices between the postatoes with filling the interstices between the postato, in ciry weather; if werm, do not cover too deeply at weather; if werm, do not cover too deeply at first, but as sold weather advances put dirt on first, but as sold weather advances.

EGOS IN THE ARTS.—Rggs are used largely in the arts. Albuman is made from the white and egg oil from the yolks. The egg oil is needer one part of the result of the control of the control

The length of the foot is proportioned to the hight of its owner, as follows, the hight being hight of its owner, as follows, the hight bessians, 15.5; Hungarines, 15.1; According to the Medical Med

A Noverty in Door Knous.—The newest thing in door knobs bave glasse and, like a bill-cye landern, in which the number of the bouse is seen in black paint by day and black by night when the little lamp inside the knob is lichtled.

Varnish yor Harress.—A good, black bright varnish for harness may be made by grinding 'black' into a quick-drying body granish

# GOOD MEALTH,

### Healthy Exercise-Lawn Tennis.

Exercise in the open air, when not ostried to the point of the open air, when not ostried to the point of over-fairgue, is of all things the most desirable for gaining strength of body and mind. Of all open-air amusements, horseback bed, bed, of the strength in the least to acknowledge the this time of writing is to acknowledge the contract of the latest of the latest of the Olivier of the latest of the latest of the Olivier of the latest of latest of latest of the latest of latest

as need to the social neighborhood over village and the putching and the first performances, the putching range of the social neighborhood over village and gentle ladies, such as the California L. T. A select olub composed of gentle could be social such as the California L. T. C. d. is surely a mutual improvement of the profess of the word. It is not our purpose to criticise, and if it were little fault could be very sense of the word. It is not our purpose to criticise, and if it were little fault could be very sense of the word. It is not our purpose to criticise, and if it were little fault could be very sense of the court is well finished and chomen is number of members and were morbers and sense of the control of members and by managed and the interpretation of the profess of the control of members and selected the court of the profess of the control of the profess of the control of the control of the profess of the control of the profess of the control of the profess of the control of the c

On Saturday William R. Taylor and Walter McGavin defeated J. M. Kilgariff and Fred W. Beaver. Score: 7 to 5, 6 to 3, 6 to 1. A pair of silver rackets, presented by Miss Dell

# VSEFUL INFORMATION.

GRAPHITE VS. HENDLAND, —NO one who reads, especially seem of the care to the c

A CHORGE STATE HOUT EALIHOADS AND NO HOUSES.—It is not often that eight reliforable are at the same time under construction to any one place, however important it may be. And one place, however important it may be. And one place, however important it may be. And eight reads are long on the contraspondent, writing from Estilville, Vet, points out the fact that eight roads are now either actually being built, or soon will be, all to meet at a place where a town has not be all to meet at a place where a town has not been laid off even. Big Stone dap is the name of this remarkable place. It is a great west Virginis and Esserin Kentucky, and of the river in the reads of mountains at the structy, and of the river, which has broken its way through the river, which has broken its way through of the river, which has broken its way through of the river, which has broken its way through the cross the mountain range, there is said to be a and with the unduring the mountain range, there is said to be a and with the unlimited applies of fine ore and the Elishorn cooking coal and ilmestone in burndar dance, this place ought to grow very rapidly and or index judicions management.

PERFUME FROM FADED ROSES,—Instead of the best of the b

One of Chester Stermboats, John Rosob's Constract to Constract to bild a large side-wheel steamer for the Old Colony Steamboat Co. of New York. The contract price is \$1,500,000. The boat will be a connectent of the Pilgrim, which was launched connected to the Pilgrim, which was launched which was launched with a pard five pars ago. The new vessel, which will be named the Puntan, will be 386 feet for your still, and \$7 feet wide over guard line; her depth will be 18 feet 6 inches, and from the top of the dome to the base line will be 60 feet. She will be fitted with 253 state. See the will be fitted with 253 state. The top of the will be fitted with 253 state. The man and Puntan will be the two largest steamports and Puntan will be the two largest steam-

PROVIDING FOR WORKMEN IN UD AGE.—The plan of the German Government to provide for workmen in their old age will be applied at first only to industrial workmen, of which it is estimated the number is 7,251,000. The minital man pension to be silowed is 120 marks yearly, the State, employers and workmen each contributing one-third of the pension fund, which will be a tax on each individual of these marks yearly. It is estimated that a State credit of yearly. It is estimated that a State credit of yearly. It is estimated that a State credit of yearly. It is estimated that a State credit of yearly. It is estimated that a State credit of yearly will be required. All workness of yearly is a state of sign when the bill is proved to the state of the following the bill is passed, will be excluded from its benefits.

A New Alloy has been recently introduced which is said to practically regist the attacks of most soids and alkeline solutions. It is composed of copper, 15 parts; tin, 2.82 parts; antimony, 1 part. It is a bronze, with the addition of lead and antimony, and can be used in the laboratory to take the place of chonite, which is a place of the company of the solution of the company of the company

KEEPING Swert Ponators,—The season of the year is now at hand when this crop will be ready to gether, and as it is still a debatable question as to the best method of keeping them,

# ENGINEERING DOTES,

Stradying Chimarks by Loading,—Mit. A. Hellenberg constructes to the Soiteschrift of the German Society of Engineers an articole upon German Society of Engineers an articole upon German Society of Engineers an articole upon Geoliation in Spirit, and the standard of the Mitch, when he welfulle in Someone are considered to cast alternative degree.

Consequently the chimary was loaded by put. The one alternative degree. Solid of the standard of 2½ cwt. The one approach of 2½ cwt. The one approach of the standard of the stan

The Parkman Camain completely stopped, and the project of demining up the Chagres with 25,000,000 oubic meters of earthwork, accompanied by a onlyer barge enough to admit the issue of a stream gauging 400 cubic meters of acting mearly as wide and deed deep as that required for navigation, depends, the forbestness of the tremor the forbestness of the tremor of the ground would bring down the whole and his shareholders are in a terribly awkward mighty structure. Altogether, M de Lesseps and his shareholders are in a terribly awkward which have cost over \$50,000,000 of money, and pilety structure. Altogether, M de Lesseps and his shareholders are in a terribly awkward they have two alternatives, and only two, betone they cannot very wet they note that one of them is to sell the whole they have two alternatives, and only two, betone the confer it to surpoid M. de Lesseps, and to put in somebody who will personelly engering the works. Who that somebody who will bersonelly ampended.

They have two alternatives are not sell the works to send the works. Who that somebody who will bersonelly engering the works. Who that somebody who will bersonelly ampended.

PROGRESS OF EVOLISH MARIUE EVOLINERTRUG. The steamship Obio, an American built
vessel of 3325 tone, belonging to the International Navigation Co., has lately been repaired
tones of case of commercial continuations of the continuation of the c

CARBONIO ACID GAS AS A FIRE EXTINGUISHER.— The Bury, untermed sode-water
teat, which has chiefly distinguished itself
during the time of hot weather by bursting and
during the time of hot weather by bursting and
during or maining its attendants, has made a
new departure, says Wive and Water, and now
appears in the role of a most efficient extinguisher of fire. Some days ago, at Louisville, Ky., a boy carried a lighted candle into
the cellar of a drug store, and in some unexplained way set fire to a vessel full of varnish,
which blazed up through a grating in front of
the building as high as the second short. Before, however, the flames could gain breadway
fore, however, the flames could gain besdway
plained building, the heat had melted the lead
to be connected with the newly charged sode
fountain and the stames were insteartly exfountain and the stames were insteartly exfountains and the stames were insteartly ex-

The Proposed Tunner, Berwern Evoland And France. The great enterprise, championed by Sir Edward Watkin, still lacks the groot brings on each side of que. The preliminary borings on each side of the channel have been carried a few miles—far commercial and prescrical fessibility of the work. To all the world outside of Great Entrain the project commends itself as desirable for the project commends itself as desirable for the project commends itself as desirable for the glishmen disapprove it, owing to the mortal fear they have of the French. They are afraid, in case of war, it will be impossible to prevent an analysis of the majority of Entraines of the firm making a trush through the current and capturing the entire country.

to learn that there are now running in this country II electric railways, equipped with 68 motors and motor ears. It is estimated that they are now carrying at the rate of three and one-half million passengers a year, and when the roads now under contract are completed twice that number will be carried. vasm eeriquus Iliw M.—, SYAWIIAH DIRICHAL Bidi ai gafaant won ere erede sade

asia ridge, and the geople may look out for increased activity in the rich mines there.

Jate Williams to the geople may look out for increased sectivity in the rich mines there.

Jate Mining Prospect.—Calaveras Chronick, by days, ance the time that maked in tecendent of the cocardinate of the county beas suffered peculiarly uncleased and places in the past, but these for the fortunate circumstances in the past, but these force county made and the past past of the times of the fortunate circumstances in the past, but these have indicate; as near a certainty as the best algore can indicate; fast and the past, but there have been to the circumstance of the castern portion of the cardern portion of the fast two or three years, particularly the past year, and uncably at West Point to work the past year, and uncably at West Point to work the past year, and uncably at West Point to vorting the last two or three years, particularly the past year, and uncably at West Point to vorting the last two or three years, particularly in section of the fast substances, and there is certainly no section of the State that should be worked below was the authority of the fast should be worked below was the said to be overoned. West Point, with probably one exception, has been worked below was the said to be overoned. West Point, with point the work waste had to be overoned below was the said to be overoned. West Point, with point the work work and the substances, and there is everally not can be overoned below was the said to be overoned. The work worked below was the and the substances of affairs has seek to be overoned to a material work of the past should be substanced to an extensive the i

bic Mining Surt Sertter,—Chico Enterprise, Sept. 17: "The Pershbacker mining case has been compromised, and Messrs. Gregory, Singer, Abbott was breathly lead to the compromised of court and privately. Ur. Burwast maste outside of court and privately. Ur. Burwast maste outside of court and privately. Ur. Burwast most mater outside of court and privately. Ur. Burwast in for the preliminary arrangements are well informs us that the preliminary arrangements are well informs us that the propriate of the settlement of that after are great to hear it, for the settlement of that after are great to hear it, for the settlement of that after are great to hear it, for the settlement of that after are great to hear the heart of the Mag-size ring the form the form the form of the Mag-size ring in the rich mines there.

MAGALIA KIDGE.—Butte Metord, Sept. 17: Mining on the Magalia Ridge is abowing considerable scuvity, and new mines are being located and opened. The Autora mine has been incorporated with a capital stock of \$250,000, and will soon be placed in operation. That the Magalia Ridge is rich in mineral wealth is well known, it only needs to the in mineral wealth is well known, it only needs to placed and energy to open a dozen or more Peraheter dealing. With Big Bend unned in tull operation, and the mines of the Magalia Ridge in full beats are such as the miner of the Magalia Ridge in full plant, and the mines and incore wool than ever better beat dealing where and more wool than ever better Mining Mining Surf Serfer more wool than ever be-

CALIFORNIA.

IRINING BUMMARY.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

Navice.—Virging Ratchysire, Sept. 17: On the cool even than the ore body from the north drift which in the ore body from the north drift which has been extended its feet and examined in the ore seat crosseou on his tevel and advanced the same 35 cest. On the cool evel have standard work in the cool evel have a standard of the coolered northwest drift from the bottom of the Goolevel winze was advanced to see standard and the coolered of low grade. On the coolered northwest drift from the bottom of the Goolevel has a standard and the coolered been shall has been extended as feet. No work has the shall has been extended as feet. No work has the shall has been extended as feet. As work has been do not be so level after and the standard on the sool evel and the work has sool feet. As southeast drift from the standard as a season of the cool of the standard of the standard on this core of the standard continues in fine ore. A southeast drift has been started on this level in this core body. It has been started on this level in this ore body. It has been started on this level in this light-grade of the standard of the stand

ment one control which we can be control to the control of the con sin-drift 100 feet in length was driven, and the main and other main. Plumas, Avolkiuc THE CREEK.—Plumas Avational, Sept. Plannas, Workliuc THE CREEK.—Plumas Avational, Sept. Plannas, Sold.

Plumas, Sold Constitution of All closes that the conformation of Bellium and the gravel yielded x K ounces of plenty as good ground absing which a prospect as good for a valuable claim. As the conformation of blanch of the water include and as the conformation of blanch of the water included by the conformation of the conformation of

Los Angeles.

1809 Minuss.—Cot. Los Angeles Herald, Sept.

177. An immense mountain of tron ore has just been discovered by a party of 128 Frenchmen, near Lang discovered by a party of 128 Frenchmen, near Lang on the ground and saw the mine; and, in my opinion, it is the bonanza of modern times. I have newfrences and Los Angeles pronounce it non with francisco and Los Angeles pronounce it non with places agree, still some old miners declare it is tim. It have plenty of the ore at my house; any one can passe it leave plenty of the ore at my house; any one can been the lucky ones, and no one knows it better been the lucky ones, and no one knows it better than the lucky ones, and no one knows it better than the lucky ones, and no one knows it better than themselves.

Los Angeles.

EVILLALIVE HALL TO COURT THE COURT TO COURT THE STATE OF THE COURT THE COURT

GOLORS PROM THE MINES.—Yreka Union, Sept. 15: H. J. Diggles of Ford Jones has bonded the Finery mine in New Pinery district to J. B. El. Finery mine in New Pinery district to J. B. El. Finery mine in New Pinery district to J. B. El. for the work on San Francisco, where he purchased mining supplies for the winer. He will at once commence work on a soco-foot tunnel. The University is good piles for the winer. He will at once commence work on a soco-foot tunnel. The University as good Dio, see making extensive improvements on the Mondrie on the Mondrie on the Mondrie on the Opin, see and the Mondrie on the With the coming of water to attach my purchased With the coming of water to attach will be stated the days ago with With the coming of water to a few days ago with With the coming of water to a few days ago with With the coming of water to a few days ago with Covernor Daggert and I. H. Hashitt. The mine has a served clean to Cottonwood displaying the water that the bring worked by Ev. Licutenant Covernor that the present and I. H. Hashitt. The mine has yielded many thousand dollars, and under its present man many thousand dollars, and under its present man agement will best its previous good record. AM EVIDENT BONANZA,—Foothill Tiding, Sept.

(Gravel richer than ever before was found this sek in the Morning Star mine at lowa Hill, Am annel sectioning Star mine at lowa Hill, Am annel sectioning Star mine at lowa Hill, Am annel section in English was driven, and the main annel section in English was driven, and the main in A pan of the gravel yielded XX outness of the American Control of the Control of th

devedness is entirely wiped out, which will probably state of the eaplies will probably state of the eaplies letter.

Sept. 15. Over 50000 shares of the eaplies letter of the WILL PUT out MACHINERY—Footbill Tidings, its W. W. O. D. mining company, set adde to working capital, have been sold, and asless are made working capital, have been sold, and asless are made visit of the mining the work of the spanning that it is to be found that a factor of the work of

plus over expenses is anticipated during the present run, No attempt will be made to sink another level or go to any expense whatever to develop the mine any further than is actually necessary until the inably take about three or four months longer.

WILL PUT ON MACHINERY—Roothing Takings

SAN LOUIS.—Slerra. Sept., 17: Two Shure, Sept. 17: Two Shifts are engaged in ainking a winze on the ledge from the force of the state of the state. Active operation is the state of the force of the state of the st

Washoe District. NEAVDY.

The BUCHANA,—Sonors Democrat, Sept. 173. This mine under the preests management has developed to be one of the foreenors are in California, I wo large sir-compressors are in good work.

This mine and were put in accessful operation on in the mine and a spen for each of the good of the foreen singly and is in the concious the continued down goo feet more to the co-foot level, and is in the continued down goo feet more to the co-foot level, and is into the continued down goo feet more to the company and is a short space of the mile and a select and is in the mile and a select and is in the company and is good of track-iron, ears and machinery, defined in the company, and is yeldedling up a last mine.

PROGERESHIC,—Tuolume Instructured by usen the company and is good of track-iron, ears and machinery, defined in the ore company, and is now there, and the view and the ore as soon as goosale. At the Experimental the patent crusher that is now the unning the patent crusher that is now the unning the patent crusher that is now the cumming on the buildings, and the mill will be the patent crusher that is now the dump will be crushed up. The water that is on the dump will be crushed up. The water all the ore supply for mining purposes has been abut off, and conce, and the patent crusher are therefore the order and and and and a supply for mining purposes has been been abut off, and conce,

Tuolumne

Trinity.

ELEVER BARS OF BULLION,—Redding fives—
Persi, Sept. 17: Col. Magee sent to the latt for exhibition, 11 has to laulion, aggregated weight about
1500 pounds. This was a portion of the product of
month of hugust. The ore is now successfully
worked at the company's mill under the able mansegment of James Salee.

Blotter.

### 'មានមួយម

sion of the Hallsted mine, has been sold to lower county parties, who will immediately put up a mill and open the mine. There is great excitement over quartz finds near Gold lake. The whole county parties, who will inner see the place over quartz finds neared off and surveyors are keep busy but it is being saleed off and surveyors are keep busy on the Indian Valley mine, although more men are needed. The saleting of the shalt was commenced and good progress is being made. The breaking of one continues and the milling will start up again before one continues and the milling will start up again before though the continues and the million recently shipped showing the gold worth \$18 per ounces. Work has showing the gold worth \$18 per ounces. Work has been possible for the property of the pro

Not Prosessure and in Emeric Mining is the most of the

Beveille District.

Beveille District.

Beveille Sept. 77. On Wedschip has Northe Bros. shipped from Reveille, Nye
conty. siver belling valued at 5555.75. The mines
nonlinue to body well.

THE BULLBOWHLE.—This mine is simmed two makes scribbwest of Phorbe and is a fine general Neessawa Short of making good wages. We were confident of making good wages were shown some ore from the mine that assayed over from the mine that assayed over for the or the confidence of silver to the formula security of the se

# San Antonio District

HATU

Sure of the sure of the

THES SILVER STREET—Wood Steen Training SuperThe Silvers was ended to come from the street streets

The Silvers was made as presented to the obligation

amen in this of the measurement of the obligation

amen in this of the measurement of the obligation

amen in this of the measurement of the obligation

and the street was the street of the obligation

and the street was the street was street of the street

and ready to copy as oon as the mill can be got

and ready to copy as oon as the mill can be got

and ready to copy as one of the defended as expressed

to will sent on with 15 flows sunders the company

to be only and one to the third selected to the con
tion set of measure the sufficient will be street on the con
tion set of measured the conflowed are working

too set of ourselve the mill beatches them to the conflowed are

too set of ourselve the mill beatches them to the

too set of ourselve the mill beatches the con
tion set of the control of the con
tion set of the control of the con
tion set of ourselve the mill beatches the con
tion set of ourselve the mill beatches to the

per day.

The jurian theory of the con
tion of the con
tion set of ourselve the con
tion of the control of the con
tion of the con-

### OBEGOE

### COLER MEN

COLORADO

ANATHOM

Euroka District

Science A Vergent.—On the year of mitternal Activeted. It shows no change of matternal a is out 945 feet. It shows no change of matternal Potock.—The south drift from the Sharon shaft on the 145 level is making good progress.

Lady Washingtook.—The north drift on the Lady level is still being advanced alone the rein.

Union Cox.—The northeast drift is out tab feet, with the face in vein progress.

UPHR ... No. 1 winze on the 1300 level is down to seet. It shows no change of naticalial

On the area level a winner being sunk the ove body for the purpose of expinence This over asset system to and I

CATTESTATE IN QUARTE, graving and the state of the rad of the state of the conflored of the conflored of the state of the conflored of the state of the conflored of the conflor

# GREGORY &

San Francisco, Cal.

Cor. Fremont and Mission Sts.,

IMPORTERS AND DEALERS IN ALL CLA:SES OF

ATLAS ENGINE WORKS ENGINES ENGINES. HOISTING

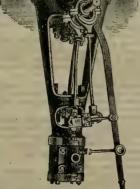
SONTAL ENGINES.
PAYNE'S VERTICAL AND HORI-

SICKERING ENGINE CONERNORS EMPIRE LAUNDRY MACHINERY.

TAUITE CO.'S EMERY, WHEELS

Korting intectors and edec-NATHAN AND DREYFUS OILERS.

H. W. JOHNS' ASBESTOS PACK-LANE AND BODLEY SAW MILLS. ING CO'S KUBBER GOODS.



MEBBER GENTRIFUGAL PUMPS. BUAKES IMPROVED STE BICKEORD'S POWER DRILLS, BEMENT & SON'S MACHINISTS NEW HAVEN MANUF'G CO.'S MA-CHINISTS' TOOLS. REANK & CO.'S WOODWORKING MACHINERY,

BRAINARD MILLING MACHINES SHIMER MATCHER HEADS. STURTEVANT BLOWERS EERIN BYND SYM BUYDES!

HOLLOWAY FIRE EXTINGUISH-SCHTENEER'S BOLT CULTERS. MASSEY'S STEAM HAMMERS. BRADLEY CUSHIONED HAMMERS. TURBINE WATER WHEELS.

# YACHT ENGINES.

# **ENCINES** Sug BOILERS

FROM 2 TO 100 H. P., ALWAYS IN STOCK

### LUBRICATING MILL SUPPLIES OIFZ ONA



For Sale by all druggists.

# N'S'KEILH

Keith's Electric Dynamos,

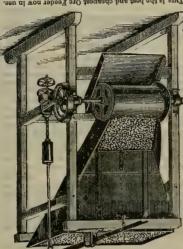
MOTORS, LAMPS

Storage Batteries.

Electric Railways, and Apparatus for the Electric Transmission of Power.

Eactory, Il Stevenson St. Office, 40 Nevada Block,

BY AUG. J. BOWIE, JE Practical Treatise on Hydraulic Mining.



[Patented May 28, 1882.] THE ROLLER ORE FEEDER

Golden State and Miners' Iron Works.

Sole Manufacturers,

S 27 First Street, 🔆 San Francisco, Cal

San Francisco Cordage Factory

Constantly on hand a full assortment of Manlla Rope, Jine, 60cc, etc.

Extra sizes and lengths made to order on short notice Extra sizes and lengths made to order on short notice. Established 1856.

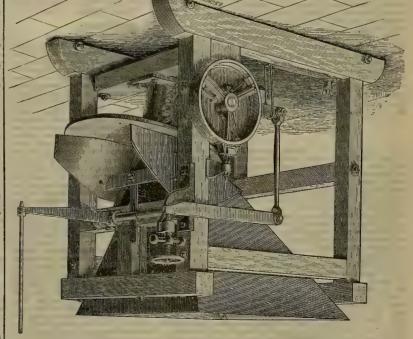
THE RUSSELL PROCESS COMP'Y.

C. A. STETEFELDT, President.

NEW YORK OFFICE, IS BROADWAY

**102HOA HENDY MACHINE WORKS** 

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.

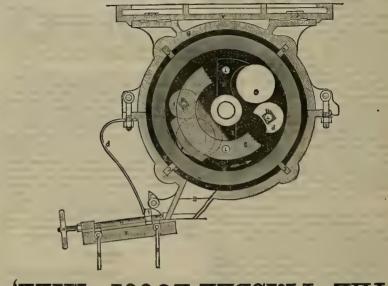


The est form of Feeder ever devised, and pronounced by reputable mining men to be far angerior to sany form of "Robler" Feeder manufactured. We refer to the follow-ing gentlement who have furnished as with testimonial letters to the above effect, which can be seen at our office, vis.:

W. Croomer, Supt. Burnler Hill Gold Min. D. C. Wickham, Trylor Mine, Greenwood, Carlo, Call. J. R. Trechoan, Bupt. South Spring Gold Min. D. C. Wickham, Trylor Mine, Greenwood, Call. J. R. Trechoan, Bupt. South Spring Gold Min. J. R. Trechoan, J. R. T OHALLENGE" IMPLOVED ORE FEEDER.

And will furnish descriptive Catalogues and copies of Testimonial Letters, and will furnish descriptive graces upon application.

**EEISBEE-LUCOP** 



ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 6000 pounds wet.

All wearing parts easily and cheaply replaced, May be seen in operation at the New York Metallurgies I Works, 104 and 106 Weahington St., and Paoific Iron Works, San Francisco.

Certificates as to performance of the Mills, and any information required, intuished on quarter of the Metallurgies.

THE FRISBEE-LUCOP MILL CO.

Office, 145 Broadway, cor. Liberty St., that the loston NEW YORK,

HOOKER & LAWRENCE, Gen'l Agents.

-basi ni noiteraqo ni al altow gnitisma gni

This Mill as a Crusher and Pul-

STURTEVANT MILL

CORNISH

**ENCINES** 

**BOMPING** 

# Metallurgy and Ores.

# SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, GOLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE,
LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

# JOHN TAYLOR & CO.,

ASSAYERS' MATERIALS, MINE

GISLS, GIVERNYKE VND SUNDEIKS' KI CHEMICYT VEFYKYLDS VND CHEMICYTS' AND MILL SUPPLIES,

II4-II8 Fine Street, - San Francisco
We would call the attention of Assayers, Chemists
Whings Companies, Hilling Companies, Francesco, Mulling Companies, Francesco, Mulling Companies, Francesco, Mulling Companies, Page Cran
Joseph Companies, etc., including, also, a full stock of
Discussions

dad and a fad seasy a flag case and data was and astronomy of the degrees of the flag case of the degrees of the degrees of the degrees of the degree of the

Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

Ores worked by any Process.

Ores Sampied.

Assaying in all its Branches,

Analyses of Ores, Minerals, Waters, etc.

Working Tests (practical) Made.

Plans and Specifications furnished for osst antishel Process for Working Ores.

Osst suitable Process for Working Ores.

Special attention paid to Examinational Alines; Plans and Reports furnished.

O. A. LUOKHARDT & OO.
(Formerly Hubn & Luckhardt, )

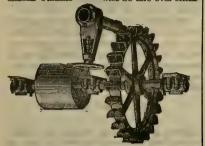
Mining Engineers and Metallurgists.

METALLURGICAL WORKS.

818 Pine St. (Basement., dorn street, ... san Francisco

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



A this was one Of The cour whereis Tested A by the leads of the cour, whereis and tested of the cour, the course the cour, the course of t

INVENTORS, TAKE NOTIOE!

L. PETERSON, MODEL MAKER,

258 Market St., N. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, the supper and brass. Ores Received on Consignment, Sampled, Assayed, and Disposed

> COBNISH BOLLS, AT SEND FOR GATALOGUE TO FRASER & CHALMERS Hantington Centritugal

ENCINEZ AND BOIFEBZ'

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES



GENERAL OFFICE AND WORES: Treets, Thicago, III. , 29 M U 9

NEW YORK OFFICE:
Room 48, No. 3 Wall-Street.

Springfield, Ohio, These Wheels are designed for all purposes where limited quantities of water than high beats are utilized, and see guaranteed to give more power with less weder than direct wheel made, Being placed on horizontal shaft, the power is transmitted direct to shafting by beits, dispensing with gearing. Estimates furnished on application for wheels specially built and adapted in Estimates furnished on application for wheels specially built and adapted in Eurher information as no bother of the second properties of the order properties of the order properties of the order properties and in Iron Globe Cases, free of cost, by applying to the manufacturers. Mining Turdine Water Wheel.

# COLD MINERS

PARKE & LACY, General Agents, San Francisco, Cal. FRASER & CHALMERS, General Agents, Obtcago, III., and Denver, Col

1AMES LEFFEL & CO.,

JAMES LEFFEL'S

MEXICO OFFICE: No. 11 Calle de Justez, Ohlhushus, Mexico.

DENABR OFFICE: No. 248 Elghteenth Street, Denver, Colorado.

or 110 Liberty St., New York

TRAMWAYS.

encines'

MIKE ROPE

11GS and TROMMELS

QUARTZ MILL,

Quartz, Gravel and Placer Mines!

**SMALGAMATING** Silver-Plated

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Filteen Medals Awarded

Old Mining Plates Bought, Replated, or Gold Separated. Over 3000 Orders Filled.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

653 and 656 MISSION ST., SAN FRANCISCO, OAL. San Francisco Gold, Silver & Nickel Plating Works,

NOTICE.—My Silver-Plated Plates are well known and used everywhere. They have proved superior to all others in durability

# THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder.

American Exchange Hotel,

OHAS. & WM. MONTGOMERY, Prop'rs.

m Bank of Cal.

## The most of the	S 284HA 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MONLHES  MY SERVICE  MY SERVIC	CALLETT NITHING AND PRINTED BY A 1998   14	OMPLEAUX.  COMPLEAUX.  COMPLEA	es part of the control of the contro
## The most of the	174 YEA	MONLHES  MY SERVICE  MY SERVIC	SLINEWE **  **STANEMEN**  **STANEMEN**  ***  ***  ***  ***  ***  ***  *	Concept   Conc	en e
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	GETH NIHJI   GETH NIHJ   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJ   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJ   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJ   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJ   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJ   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJI   GETH NIHJ   GETH NIHJI   GETH NIHJ	Continues S	or o
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	od of of od, od, is is is is is on on od od od od od od od od od od od od od
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	od of of od, od, is is is is is on on od od od od od od od od od od od od od
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	od of of od, od, is is is is is on on od od od od od od od od od od od od od
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	of he
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	of he
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	an, parties of the control of the co
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	di. isi isi isi isi isi isi isi i
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	eritisis in the second of the
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	is in the state of
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	no no no oo oo oo oo oo oo oo oo oo oo o
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	nc oo oo oo oo oo oo oo oo oo oo oo oo oo
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	oo
01 400. 62 4qe8. 71 m0. 7 1408. 7 4qe8.	laugnA laugnA laugnA laugnA	HINOM	48 Yismoshnok 606 48 Yismoshnok 606 48 Yismoshnok 826 48 Yismoshnok 826	MARE OF CHARACT CORPLANT COLUMN STREET OF COLOR OF CARLON COLUMN TO COLOR OF CARLON OF	-0. 4i. -0. -0.
THAYAT 7 dq98	lsunaA	HINOM	THIN THREE I	LATEST DIVIDENDS—W	41. -0. VA
THAYAT 7 dq98	.8	HILLOW	I SERBLE NIBLE	LATEST DIVIDENDS—W	-9 VI -7
7 des	01 01	.,	te via morrace 18 comery 30 compary 30 compa	Con California & Va M Co, Nevada. A W Havens  Dorbec Blue Gravel M Co, California. T Wetzel	-A 04 1A
d toO	******				-A
31 rgA	or		328 MontganoM 828.	Eureka Con M Co Nevada. E H Willson Paradise Valley M Co Nevada. W Letts Oliver.	
d toO dI rqA 7I tq98. dI vIut.	32 02	***********	48 VremoginoM 828	Maria M. C. auoxiva	ne Ti
eI 3qe8					8.7
ai selse ts	ed zie l	DAR 180	Table of Low	San Francisco Metal Market,	91
.0.	gredoxe	Stock F	S. F. S	AHOLESALE,	10
VEEK WEEK	WEEE N	MEEK A	MAME OF	THURSDAY, SS. 1887, S. 1887, S	40
br. 15. Sept. 22.	leg -g-nddeg	g 1 .1des	COMPANY	KORAX—San Bendarmio	-0
87.8 05.8 37.4 0	03.8 03.8 3.2 00.8 88	00 8 00 00 8 00 00 8 00	Riphs	Role 19 @ 21	96
32.1 01.1 02.1 G	00.1131 I 36	ST T 08	Andes	The Branching   19 @ -     The Branching   19	-र प्
08.8 08.4 00.7	89 00'4 06 89 00'4 06		Panabar	Eginton, ton	91
38 I 33.I LQ.I 3	06 I.5UII.I		Raltimore	October 15 to 15 t	*J
00,2 33,1 31,2 0	0.1 00. CC	1 19 1 00	Bodie Gon	Shotts, No. 1. — 500 @ — 500 @ — 500 @ — 500 @ — 500 @ — 500 @ 500	-I
08,9 00.8 00,8 U	00.1 02.1 88	3; 38. 08	Bodie Tunnel	(D) B	81
PAT FOT BAT	LI 781 L	1 61 44 1 61 44 1 61 44	Con. Va. & Cal 1	Block, \$ bag. 2 200 Drilled, do 500 bag. Drop, \$ bag. 1 80 @ − 50 0 @ − 50	p
00.7 65.8 4.45 00.7 65.8		00.7 87	Ohollar.	Oblined, do	16
09*	09. I 09. 03. 03.		Ishadmi not	8 % O I O I O I O I O I O I O I O I O I O	13.
86. 07. 01.1 c	8. 06. 08	3.7 27.7 68 3. 08. 87.	Oaledonia Oon. Pacido 5 Orocker Orocker 5	200   200	00
			C.6007781	O O I SERILVEE DY AUGUSTALIAN O O O O O O O O O O O O O O O O O O O	00
87 47 00.8 5 08.10 1.10 1.30	STI OE.I OI	00.8 82 0.1 02 I 09	Exchequer.	NINC-German 8 (@ 9 Bh eet, 7r3 ft, 7 to 10 m, less the cask 8 (@ 9	09
91 7 92 3 30 4 10 9 3 30 4 10 9 3 30 4 10 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	_	3.E 04.A 08	Grand Prize.	New York Metal Market.	09
	II.4 OI.4 d7		Hale & Moreross., 3, Holmes		09
35, 35	25. 69 85. 67.	09 09 09 09	awol	Telegraphic advices dated Sept. 22d give the following New York prices:	09
03	07. 09.	08. 09	Kentuck	BAR SILVER—96 per oz.	12
87. 68. 88. 8	44.0	dir 04, i di		Сорем. — 1, \$22.00. Сорем. 1 4, \$22.00. Пеон. — 1, \$2.00. 1, \$2.00. Гал. — 5, \$60, \$6.10.	ei Bi
87. 08. 88. 6	02.1 48.1 55		oldoid AM	LIKAL—\$4.00@4.10.	86
87. 08. 88. 6 87. 07. 88. 6 82.1 02.103.1 ( 90.5 82.5 09.4 ( 00.4 (00.4 (	02.4.354.20	6.90	Northern Belle	well " off mort lism yd testal edt si wniwollot edT.	u
87. 08. 88. 6 87. 07. 88. 6 82.1 02.103.1 ( 90.5 82.5 09.4 ( 00.4 (00.4 (	36.1 37.7	48 05 48 05 48 05	Worthern Kelle	Well "solveng is the latest by mail from the " New	16
87. 09. 86. 8 87. 07. 88. 0 82.1 02.1 04.1 0 82.1 02.1 04.1 0 82.1 02.1 04.1 0 83.1 02.1 04.1 0	08.4 08.4 00 97.7 1.36	00.1 98 03 0.1 32.4 08	Morthern Belle. N. Work Grand Belle. N. Work Belle Isle. N. Work Grand Belle Isle. N. Work Grand Belle. N. Workh G. & O. Workh G	wsW." edt mroit first nedesk op man it from tyle wsW." edt mroit first nedesk op war verwer verwer was verwer was seen op was seen op was well as well of the word of the word was seen of was well as	10
47. 04. 98. 0 47. 07. 98. 0 48. 00.703.7 48. 00.703.7 48. 07. 98. 0 48. 07. 08. 0 49. 07. 08. 0	08.4 88.4 80 08.4 88.4 80 08.4 88.4 80	88 09 00 00 00 00 00 00 00 00 00 00 00 00	North Belle Isle 7.8 Ning Theorem 3.6 Mev. Queen 3.6	well " off mort lism yd testal edt si wniwollot edT.	

Bricas georgia (1972)

Bricas georgia (1972)

Pricas georgia (1972)

Bricas (19

### Mining Share Market.

Bullion Shipments.

08.5 31.5 02.4 06.5 00.4 01.5 08.5 03.2 08. 08. 08. 28. ... 28. 28. 28. 22.7 03.8 27.7 52.7 37 00.7 87 37.8 62.2 08.8 24.2 00.7 87 37.2

280 Courie & Not.
280 Courie & Not.
280 Courie & Courie
280 Courie & Selopea

Peer, Silver Star. Silver Star. Silver Star. Seer Belcher. Silver Hill. Silver Hill. Scorpion. O'nion Con. Ukai. Vellow Jacket.

Alining stocks continue depressed notwith standing stocks continue depressed notwith standing stocks continue depressed notwith single storable riports from the Combstock mines. The Con. California and Virginia mine samples. Steady builton abigments result from which averages \$34 per ton according to batterion this ore. The Enterprise states that the new water mill below the Chollar works is steadily be ready for solive see reflection, and will be ready for solive see reflection in such as a vetenties and ponderous establishment always taking longer than the expension in such as a vetenties and ponderous establishment always taking longer than the expension of the Chollar, Potest, in the upper portions of the Chollar, Potest, at the upper portions of the Chollar, Potest, in the upper portions of the Chollar, Potest, at least. The same may be said of the Contact least. The same may be said of the Contact least. The same may be said of the Contact least. The same may be said of the Contact least.

We quote shipments since our last, and shall be pleased to receive further reports:

Standard Cona., Sept., 21, 315, 355. Total thus far for Sept., \$27, 344. Sulver Bow, 17, \$63. thus far for Sept., \$27, 344. Sulver Bow, 17, \$63. \$12,000. Con. California and Virginia, 7, \$63. \$12,000. Con. California and Virginia, 7, \$63. \$10. \$10. Cone of the Hills, 13, \$2920. Hanner, 13, \$16, \$10. \$30. Queen of the Hills, 13, \$2920. Hanner, 14, \$200. Germania, 16, \$149. Hanner, 15, \$1428. Sulver, 15, \$300. Germania, 17, \$1428. San cont, 15, \$300. Germania, 17, \$1428. San cont, 17, \$1700. Shipments from Salt Late noots, 17, \$1700. Shipments from Salt Late Book, 17, \$1700. Shipments from Salt Late Book, 17, \$1428. that Montana can send to market in a year would supply the Chicago market only shout two weeks, while the combined annual product the Morthwestern cattle ranges would run the Chicago eattle market only about seven weeks. This result is mainly due to Chicago's caming industries, CHICAGO AS A MEAT CENTER, -All the cattle

residences. The courthouse erected in 1879 a large three-story brick building. The min Eichmond at Kuby Hill and operated Richmond Mining Co., Eureka Con. Mini Co. and others.

# Yal sgil-basH IliW

Under the heading "Will Hand-jigs Pay Mr. W. E. Menderhalt writes as follows in the Lake City Silver World:

Mr. W. E., Menderhalt writes as follows in the Manderhalt with the Menderhalt writes as some set in the Mr. W. E. Menderhalt writes as sollows in the Mr. W. E. Menderhalt writes as sollows in the Mr. W. E. Menderhalt writes as solden world.

This is a question yet undecided for the mainty so has a face sea success of this control we will be over both or iright and it bowever: We will never be made of their value for the workby of notes in the man thad the man the ma

1881 

EXPENSES.

The manufacture of the state of

MORE COMBINATIONS.—It is reported that another in manesely powerful syndices is in another immensely powerful syndices is in progress of formation, and this finne for operations are Seastor Payne, Seastors Burke and Edichie of Obio, Ersagus Wyman and A. McLaren of Obio, Ersagus Wyman and A. McLaren of Obio, Persagus Wyman and A. McLaren of Obio, Persagus Wyman and A. Debe to richest iron country in the world. The rapid of the compiler is to secure the countriol of all the known valuable iron deposits in Canada, nove the news of paties of the syndicate, which is already pledged. The synthiates of which is salt-and was allow over 100 properties in the world. The synthiates of the properties in the world. The syndicate, will own over 100 properties in different parts of Canada. Great mineral distances is suit, and on the control and enhance prices, and to need to obeapen produces, it is quite con other employed to out on trol and enhance prices, and to heece out operators of smaller capital.

AT a special meeting of the Board of Trade at Los Angeles, resolutions were adopted faround to the project of a standard gauge railroad from Salt Lake City to the Angeles, and piedging the support of the board in carrying out the plans proposed by the projectors at Salt Lake,

Peat and its Uses.

Translated for the Parss from the French by M. M. M.

in see which are at present made of this coal in formation. We know that it is the only fuel of chemones peasant. Now, thanks to M. de strion at the only seeded of the Ardennes peasant, you legation at the ansate, we can indicate some of its various mass. Turf is now worm in veets, shawls, and clothing of all kinds. M. Barand, a Limbourgeois, has given his rame to a kind of these nour general method of these nor seed that a special seed of the source of the seed of seed nases which are at present made of this coal in formation. We know that it is the only fuel Concerning the utilization of turt or peat, the Independence Beige says: While our tourbiere (turt-pits) of the Yagne are slowly burned, it is not without interest to recall the principal and without interest to recall the principal.

Like cotton. A the trust between the same made and adde the lorgune or its inventor. The Trike and of them cloth is man, and so them cloth is man, and of them cloth is man and in supersone. The tiesue inoresees in flexibility and is deperatore when the betandine is min. Fig. 4 with an equal quantity of wool or cotton. Make for each as office-cappets, curtains and voltains for apartments and parlor carpets, ordinary coverings, contain 30 per cent. With 10 per cent or capets, outlains for apartments and parlor carpets, wool, they make from it blankets for poor tamperson, wool, they make from it blankets for poor tamperson, and wool, they make from it blankets for poor tamperson, of wool, the demand for beaudin as adments and captured of wool, the demand for beaudin as admentally seed and horse-cloths. At each rise in the price of wool, the demand of the capture of the same, would be activable only of the capperson of the same, would be actively the same of the countries of their beauges of this pet of the same, would be actively and purity, and the same, would be actively and purity, he cause of various disease. The other same, would be actively and the evening the overing an unwholesome of their colleges, the cause of various disease. The horse labories and does not tain the fash nor seen in the capture, and also the properies of particular despites of past into orderson. A French physician has recently received a patent for the discovery of the properties of past.

From a Kilogram of Raw Material heaven on where in helpey and they are apin 10,000 meters. In Holland they now have a mumber of manufactories for the The Turf Fibers are Spun

They can epin to the end to the properties of peat,

They can epin 10,000 meters, In Holland they
now have a number of manufactories for the
200 workmen are employed. France, England,
200 workmen are employed. France, England,
200 workmen are employed. France, England,
200 workmen are busily engaged in working
their turf-pits. Last year Germany had a
special exposition at Augaburg from Aug. 8th
their turf-pits. Last year Germany had a
special exposition at Augaburg from Aug. 8th
tave found many uses for these labrics, sud
and more as a stable factories have been already established at Berv
lin Hamburg, Chemnitz, etc. In regard to
peat-atraw, which since 1882 tends more
as a stable littler, it is made from herpeater than that of stars, the end at Berand more to replace the ordinary straw
peater than that of stars. The system
as a stable littler, it is made from herbaceous and dried peat. This material
greater than that of stars, there straw
In Holland, the cavalry and artillery near more
and numbers several tactories operated by steam,
and numbers several tactories of the properity
and numbers several accorate on the road to prosperity
and numbers several accorate on the serial points of
and unmbers several accorate on the serial peater
and numbers several accorate on the stable interpretation
for the litter, but in summer only. The experiand numbers several accorate of the peater
and the base of on the foot an interpretation
for the base of on the foot and an monoises.

Action of the agriculturiets. Upon this litter
muck to the agriculturiets of the peater
are fetid mire, and is sold at a low price for
muck to the agriculturiets. Upon the egring
as only during 15 days. After that peated it
as fetid mire, and is concerned to the serious
and the base of one tile foot was not often. It causes
the horses of nor tile down so often. It causes
are being sold to the agriculturiets of the serious
are being sold to the serious error
beatings of the point of the serious of the serious of the serious of the serion

## Austin and Enreka.

R. R., 93 miles from Battle Mountain. It has three churches, good public schools with five teachers employed. The town is 6500 feet above sted at the terminus of the Nevada Central EDITORS PRESS :--Austin, now a flourishing mining town of about 2000 inhabitants, is situ-

teachers employed. The town is 6500 feet above sea level in the Toiyabe range of mountains.

The mines, including the Union, Ophir, Lander, Frost, I-abella shafts, Paxton incline and Big Tonnel, are under the management of the Machattan Silver Mioing Company. A 20-beaung mill is kept running day and night.

Leaving Laten Silver Mioing Company. A 20-beaung mill is kept running day and night.

Leaving Laten Silver Mioing Company. A 20-beaung the desert easterly to Enreka. Eureka, the county seat and metropolis of Eureka county, is site attended at the forminus of the Eureka county, is site attended at the terminus of the Eureka county, is site attended at the terminus of the Eureka county, is site attended at the terminus of the Eureka county, is site attended at the terminus of the Eureka county, in site site and may not a site of the fown has several churches, good public it former and a great many more.

The town has several churches, good public it forming it formerly had a great many more.



# ELECTRIC DEVELOPMENT COMPANY.

# Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Trancars, Elevators, Signals and all idnds of Electrical Systems for lighting and

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

# Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

# CALIFORNIA VIGORIT POWDER CO.,

No. 40 California Street, San Francisco,

# NILHO-CI'ACEHINE

# Blasting Powders. ("DYNAMITE" or "GIANY")

EOH HEMODING STUMPS AND TREES, Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal.

ED. G. LUKENS, Manager.

# THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

# CIANT POWDER OF DYNAMITE,

# 10DSON POWDER IMPROVED.

BYNDWYNN, MIELSEN & CO..

CAPS and FUSE for Sale.

ATTENTION, MILLWRIGHTS!

# Bookwalter's Millwright and Mechanic. Leffel's Construction of Mill Dams and

### MINERS WANTED,

Good Quartz Miners can find steady employment at the towns of Crescent Mills and Greenville, in Flumas

Wages are \$2.50 to \$2.75 per day, with prompt pay-nent every month. These towns are easily reached by tage from Reno, Oroville or Chico.

S. R. PRENTISS, Greenville, Oal.

### UNAH-THORS

Taught thoroughly by mail. Send for circular MISS BARRETT, Rooms 7 & 8, 240 Montgomery St., S. F.

BACK Fires of the Minne and Solenthic Press (un-boud) can be had for §8 per volume of alx months. For year (two volumes) \$5. Inserted in Dewey's patent bind-er, 60 cents additional per volume.

# Steam Engine Catechism.

South Comstock Consolidated Silver Min-

ASSESSMENT NOTICE.

Series of Direct Practical Answers to Direct Practical Averages for Young Engineers and for Examination Questions.

This book is theended to enswer not only "such direct users one as head of your brothers are used in the control of the contro

the fret volume. Sold by DEWEY & CO., 220 Market St., S F.

# Compilmentary Samples.

Persons receiving this paper marked are requested to examine its consents, terms o subsected to examine its consents, terms early sind give it their own paronage, and, as lart as practicable, aid in circularing the journal, and making its value more widely known to others, and extending its influence in the fact of the subserviption rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough, if already a subscriber, please, show the paper to others.

### Don't Fail to Write.

# BOOKS ON ASSAJING.

ву С. Н. ААКОИ,

# PART I.-Gold and Silver Ores.-Price \$1

.III GMA II STEAT

# Lead, Copper, Tin, Mercury, etc.

This book is entitled "Aesaying—Parts II and III," and is separate from Peat I, and treats of Gold and Sifeer Bullion, Lead, Copper, Tin, Mercury, Zinc, Nickel, Copper, Tin, Mercury, Zinc, Nickel, Copper, Tin,

### Table of Contents:

Hold and Silver Bullion; Apparatus; Melthrg Bulli Bon blob) savying Bullion; Assay or Silver; Melthry Bullion; Assay or Silver; Melthry Silver

isellabelta to Part III; The Assay of Opper.

or Assay of Copper.

are 160 Tame, pages with illustrations in the Assay of Copper.

are 160 Tame, pages with illustrations in the Poolume are one of the Assay of Copper in clock. Price postspaid, SL/S DEWEY & Co., Publishers, No. 252 Market St., S.F.

# Patent Agency. Dewey & Co.'s Scientific Press



OUR U. S. AND FOREIGH PATENT ACENOR PURSORS and a many and importants advantages as a Home factoris, by cason of long establishment, great experience, thorough system, intrinses acquaintance of a community, and out most considerable and considerable of inventions in our own community, and out most considerable and foreign reports, faining official American and foreign reports, con scientific and mechanical publications, det. All worthy inventions patented through tion or a description in the Mining and publications, tion or a description in the Mining and Sourar Tree which great protection to inventors. The trees which greats protection to inventors. The trees which greats protection to inventors. The large majority of U. S. and Foreign Petente obsent the breat and most retime. Our eigen Petente been obtained through our Agenty. We can been obtained through our Agenty. We can see as low as any first-class agencies in the are as low as any first-class agencies in the are as low as any directions. Our prices are all the conference and a conference of the steelern Eastern Eastern

No. 220 Market St. DEWEY & CO., Patent Agents

A. T. DEWEY, W. B. EWER, GEO. H. STEONG.

List of U. 8, Patents for Paoific Coast

Reported by Dewey & Oo., Ploneer Patent Solicitors for Pacific States. Inventors.

908 WEEK ENDING SEPTEMBER 13, 1887. 369,962.—Писовак—Й. В. Angell, S. F. 99,840.—Рітнам—Г. L. Einerson, Brentwood,

730.—BAG-LOCK.—W. T. Milliken, Cheney

9,884 – EARTH-OCHM. L. Van Har-kun, Cal. 9,755 – Rallwayy Crosstie – W. L. Van Har-M. C. Van Har-

# Notices of Recent Patents.

Foreign Patent Agency, the following are worthy of special mention: Among the patents recently obtained through Dewey & Co.'s Scientific Press U. S. and

DEEDOER.—Horace B. Angell, S. F. Wo. 369,976. Dated Sept. 13, 1887. The inven-ADJUSTING THE GLEVES TO VINEVARD AND OR-CHARD PLOWS.—Matthew Palen, Trego, Los Angeles Co. No. 369,809. Dated Sept. 13, 1887. This invention consists in a novel ad-instable clevis or draft mechanism whereby the horse may travel to one side of the beam, leaving its other side clear, and adapting it to be run close up to the vine a dapting it to danger or liability of injury to the bark. The object of the invention is to provide simple, object of the invention is to provide simple, plow to travel olose to the vines and trees with-out injuring them.

DEFDORER.—Horsoe B. Angell, S. F. No.

discount of the discount of the state of the

BEED-DRILL.,—John S. Johnson, Traver, Tu-lere O.C. Mo. 369,859. Dated Sept. 13, 1887.

This is one of that class of seed-drills in which the rotating distance of the class of seed-drills in front of the drills, and form the furrows into which the drills, and form the furrows into which the drills and form the furnows of drills and successful to the invention of the rotation of the drills and the furney whereby each drill and disk is and headed frame, whereby each drill and disk is prement to make and the integral of the means of maniets of the ground, It consists, also, in the means of the ground, and disk are depressed, for the purpose of making them run deeper, or applying pose of making them when traveling over hard ground, and by which the staveling over hard ground, and by which the ground is and by which the ground when the ground in the ground which the ground in the ground in the ground which the ground in the ground which the ground in the ground which the ground which the ground in the ground which is a ground which the ground which the ground which the ground when the ground when the ground which and the ground which the ground when the ground which the ground which the ground when the ground wh

"De man wot knows it all is alluz s-makin' bloke not bloke not grave (see not find them in G-timestan's group not grave (see so, group not grave). So grave not grave no

NOTICE TO. .U TO 1811

WINING WEN

TUNNELING, SHAFT-SINKING, ETC. and others interested in ENGINEERS, CONTRACTORS,

Engineers', Tables of Progress

VAD EUL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIONS

NEM LOBK

Section 16x16 feet; Length 36 miles.

THIRD EDITION NOW READY.

SENT FREE ON APPLICATION

For Catalogues, Estimates, Etc. address:

INGERSOLL ROCK DRILL CO.,

та патиневниям

PARKE & LACY

SAN FRANCISCO, OAL, 8 California St., and 21 Fremont St.,

GREAT REDUCTION!

BATTERY SCREEUS

No imitation, no deception, no planiahed or volve imitation, no deception, no deception, or used. Only genuine flusis iron in Quarkz Screen insible for the Hunbugton and all Stamp Mills, which sells at the Hunbugton and all Stamp Mills, which ill sell at 20 per cent discount,

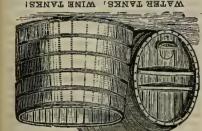
PERFORATED SHEET METAL

or Flour and Bice Mills, Grain Separators, Revolving and Shote Sorecens, Same patterness and all times of Milling Machinery. Iron, Sleed, Copper, Brass, no and other metale punched for all uses the Milling Machinery of the celebrated Slot Cut fuvenier and Slot Funched Soreens.

Durred and Slot Funched Soreens, Mining Soreens a specialty, from Mo. I to 16 (fine), Mining Soreens a specialty, from Mo. I to 16 (fine), Arrange of the State of the S

San Francisco Pioneer Screen Works, Orders promptly attended to

221 & 223 First St., San Francisco, O. JOHN W. QUIOK, Proprietor.



EULDA BROS., Proprietors, CALIFORNIA WINE COOPERAGE CO.

SHIP, MINING, and WATER TANKS a Specialty. The VIL KINDS OF CASKS, TANKS, Etc. 30 to 40 Spear St., San Prancisco.

INZL IZZAEDI

AND MAILED FREE ON APPLICATION,

CLAYTON Catalogue No.5, Jan I, 1887

And General Mining Machinery ROCK DRILLS, AIR COMPRESSORS,

Office, 43 DEY ST., NEW YORK Clayton Air Compressor Works, For CATALOGUES, ESTIMATES, Etc., Address

MACNETICE SEASTIC TRUE TRUE CASTIC TRUE CA BOLLONE BELLINEE

# JAHW

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents
for the Mexican Phosphate and Sulphur Company's Products.

Have correspondents in all the chief oldies of the United States, Europe, Australia, India, Ohine and the principal instance of the Points. Products in those countries.

Page 11 Santon of the Company of Comp

General Agents for the Pacific Cosst of MATIONAL ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass

Location of Works, Potrero. P. O. Box 2128.

H. T. Scort, Vice-Pres and Trees, W. O'B Gunx, Beoretary.

Otlice, 216 Market 5t., 5, F. 🔝

STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed. Agents of the Cameron Steam Pump.

ARRIGOT ENGINES, PARTING, CONDENSING ENGINES, SELF-FEEDERS, SELF-FEEDERS, SHAFTING, SH RETORTS, ETC., ETC. BABY HOISTS, VEUTILALING FAUS, ROOK BREAKERS, PANS, SETTLERS,

*NION IBON MOBERS* TRY OUR MAKE, CHEAPEST AND BEST IN USE,

Successors to PRESCOTT, SCOTT & CO.

SHADUORIO STAJ ROT GRES

office, 230 Fremont St., HINCKLEY, SPIERS & HAYES, Proprietors.

San Francisco

MARINE ENGINES AND ROLLERS.— Propeller Engines, either High Pressure or Compound.

MINING MACHINERY.—Holsting Engines and Works, Cages, Ore Buckets, Ore Cars, Fumping Englues and Pumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

MILL MACHINERY.-Batteries for Dry or Wet

shing, Amalgamating Pana, Setti rs, Furnaces, Re-rs, Concentrators, Orc Feeders, Rock Breakers, Fur-es for Reducing Orcs, Water Jackets, etc.

MISCELLANEOUS MACHINERY.—Flour Michinery, Saw Mill Engines and Bollers, Dredging Machinery, Powder Mill Machinery, Water Wheels.

**MORKS ORE WET OR DRY.** Tustin's Pulverizer

SOFT and DUCTILE

**ENGINES**BOITEBS

OF ALL KINDS,

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

OF RUBEITS Promptly attended to and at very moderate rates.

APRIOR OF THE PACIFIC COAST POR THE SACING COAST POR THE PACIFIC C

SPECIALITES:
Corlies Engines and Tracin Ore Pulverizers.
DEAUE STEAM PUMP.
Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater.

PACIFIC ROLLING MILL CO.,

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought fron in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from \$\) to \$\) inch diameter and Flats from 1 to 8 inch. Angles, Tees, Channels and other shapes Steel Wagon, buggy, and Truck Thes, Plow Steel, Machinary and Special Shape Steel to size and and one plants. Became, Angle, Channel, and From Te to \$\) from \$\) First, Exp. Machinary and Steel States and Inch From States and Frames and Inch Forgings of all kinds, Pletons, Connecting Rods, etc. Car and Locomotive Arles and Frames and Inch Forgings of all kinds, Pletons, Connecting Rods, etc. Car and Locomotive Arles and Frames and Inch Forgings of all kinds, Inco and Steel Bridge and Roof Work a Specialty.

HIGHEST PRICE PAID FOR SCHAP IRON AND STEEL,

Frames and Inch Forgings of all kinds, Pletons, Connecting Rods, etc. Car and Locomotive Arles and Frames and Inch Forgings of all kinds, Pletons, Connecting Rods, etc. Car and Locomotive Arles and Frames and Inch Forgings of all kinds, Pletons, Gend Roof Work as Specialty.

HIGHEST PRICE PAID FOR SCHAP IRON AND STEEL,

Frames Arles and Local Schapers and Pletons, Connecting Rods, etc.

Frames Arles and Frames a

ART HEA STODIO TEL

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

Iron and Machine Works.

Brodie Rock Crushers, Steam Power, Hydraulic, Side Walk and Hand-Power

Golden State Pressure Blowers.

First St., between Howard & Folsom, Sts

NOSTROHT SAMORT

THOMPSON BROTHERS,

129 and 131 Beale St., between Mission and Howard, S.

MANDE HS OF GENERAL MACHINERY

Works, No. 315 Mission St., San Francisco. ecial attention given to Woodworking Machinery, m and Gas Engines. Correspondence solicited.

W. A. GOODYEAR,

MINING EXPERT AND GEOLOGIST.

No. 307 SANSOMR ST., SAN FRANCISCO.

N. W. SPAULDING

SPAULDINGS

CNA

SWES

CIRCULAR

CHISEL BIT

Inserted Tooth

SAW COMPANY

Mining and Hydraulic Engineer,

ROSS E. BROWNE,

Address " Business Box A," office of this paper, San

Civil and Mining Engineer,

MINING ENGINEERS.

MANUPACTURERS OF CASTINGS OF AVERY DESCRIPTION,

ENKEKA FOUNDRY

Mold-Board AMALGAMATORS,

Manufacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

Golden State & Miners Iron Works.

HELEVATORS.

Manulacturers of B. Hondreson's Pateon kutomatic Manulacturers of Elevators. All linds of machinery Salety Catches for Elevators. (Solicitus.

Steam Engines, Flour Mill, and Mining, Saw Mill and Dredging Machines Rock Grushers.

CALIFORNIA MACHINE WORKS, Step Francisco WM H. BIRCH & CO., San Francisco, WACHINE WORKS, P. San Francisco, San

A specie. Vy. Koundo, stop, ov burted slot holes. Gen-uine Russia Iron, Homo-geneous Steel, Cast Steel or American planished Iron Br as Soreens for all mu QUARTZ SCREFNS

T SOOFEX

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

Terms, Board and Room, \$1.00 per Day

Laundry Free for the use of Families Hear retes cold batter free.

This Fire-proof Brick Building is centrally located, in the healthiest part of the city, only a half block from the Grand and Palace Hotels, and close to all Steamboat and Railroad Offices.

44 Third Street, ... San Francisco, Cal.

MINCHEZIER HONZE'

logue. I and 19 Fremont St., San Francisco GAW MILLS AND MACHINERY

opper or Br as Screens for all purposes. Call-Perforabing Screen Co., 145 & 147 Beale St., S. F.

iles of the Minne and Schwitter Press (un-volumes) & foewform of eix months, Per the additional per volume.

FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1600 ARE MOW IN USE, Concentrations are clear from the first working. The west and every nominal, & marking can be working order and ready to make teste at 330 Fremont

patents Ma) 4, 1860; December 22, 1874; Soptember 2, 1870; April 27, 1880; March 22, 1881; Feb ember 18, 1883, Patents applied for. This Mowrake Competity Confoders, Cothology, October 3, 1885.

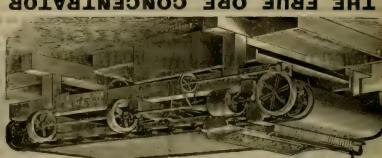
Dark Size: —Hawing tested three of your True Venence in a competitive circle with other similar machines unpply, we have circle with cuts of the superiority of your Venence, as is evidenced by the fact of our baving red twenty more of your machines for immediate delivery. Yours truly,

THE MONTANA OMPRAY (Limited.).

N. B.—Since the above was written the 50 Variners having been started gave such astriatedion that adding the fact of the fact of

Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,

"(00°0gg\$)



OR VANNING MACHINE. CONCENTRATOR OBE THE FRUE

# FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the celebrated "Triuwhh" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These sdvantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their themes being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are obnited seatures their reduced, and occupy less mill room when sets up, and in the test their cost of transportation is reduced, and occupy less mill room when sets up, and introduced into their construction, which takes for a further cost of transportation is reduced, and occupy less mill room when set up, placed in front of and which takes the discharge from the feed and smalgem bowl. The improvement is a first reformable of the one of the single season in the capit is attached the construction, which takes the discharge from the feed and smalgem bowl. The improvement is in the reciprocal in front of and which takes the discharge from the feed and smalgem bowl. The improvement is in the reciprocal in front of and which takes the discharge from the feed and smalgem bowl. The improvement is in the reciprocal in front of the season of the constitution of the shaking freme to which the take in the shaking trans to which take in the shaking trans to ship the factors of the objection of the and occupy lesses in different mining districts of the objection of the objection of the shaking transportation of the shaking frame to which the shaking the and occupy lesses of the objection of

102HUA HENDY MACHINE WORKS,

TRIUMPH" ORE CONCENTRATOR.

MOTIOE.—All our places are guaranteed to have the tild weight of silver egreed upon, and are tested be. for eleaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry.

San Francisco, Cal.

JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

BATTERY SCREENS AND WIKE CLOTH

HYDRO-CARBON ASSAY FURNACES Agent for HOSKINS'

108 FIRST STREET. SAN FRANCISCO NOVELTY AND PLATING WORKS GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FURNISHED ON APPLICATION. FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTS, GRAVEL, OR PLACER MINES.

**GOLD** 

Nos. 39 to 51 Fremont St.,

MACHINE, HYDBAULIC IMPROVED

HOISTING ENCINES

1, 2, or 4 Drums, with Reversible Link Motion or Pat. Improved Friction.

**LOK WINES** 

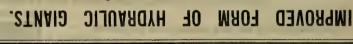
96 Liberty St., New York. LIDGERWOOD M'F'G COMPANY,

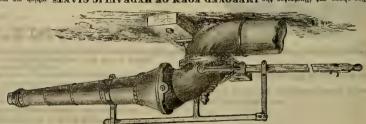
PARKE, LACY & CO. PACIFIC COAST AGENTS,

IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS. CHILLED MHEELS CAR

MEDAL AWARDED, MECHANICS' FAIR.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. HAS, R. STEIGER.





hove out illustrates the IMPROVED FORM OF HYDRAULIC GIRNTS, which we are intringements upon this effect.
All similar styles are intringements upon this form, and a pudgment stands of record to that effect,
and sunsalumished upon application to

JOSHUA HENDY MACHINE WORKS, 39 to 51 Fremont St., San Francisco, Cal.

NOTICE TO



LIFE-SAVING RESPIRATOR

and Salivation. Entirely Prevents Lead Poisoning

LNELVA

The most perfect appliance for people engaged in molities, Dry Crushing, Garan, Workel, Milokeliver, Mines, Lesad Oorcoding, Threeshing and Stock-diving, and all other occupations from the shore is a stark, poisonus vapor, or bad odor. In Weeding Threeshing, Machines, and similar and be indepensable, as no foreign subsences an be infonded when they are work, they are indispensable, as no toreign subsences and being and any stark of the stark o

JOHN TAYLOR & CO., Sole Agents, to 118 Fine St., San Francisco.

Send for Descriptive Circulare containing Testi-

PORTLAND, OREGON.

SAN FRANCISCO, CAL,

SALT LAKE CITY, UTAH,



Machinery

PARKE



MINING MYCHINEEK.

RANKIN, BRAYTON & CO

Nos. 21 and 23 FREMONT 51., and 8 CALIFORNIA 51., SAN FRANCISCO, CAL.

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and Iron Working

A NEW AND RADICAL DEPARTURE IN NOTJEZA ROILER

 $\mathsf{NA}$ 

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS,

The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

HEINE SAFEIY

L. R. MEAD, Secretary. R. S. MOORE, Superintendent, WM. H. TAYLOR, President.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

PACIFIC IRON WORKS

SVEELK' Has the Following Advantages:

DURABILITY, ECONOMY,

AND FACILITY OF INSPECTION and REPAIRS.

San Francisco, Cal.

Guaranteed More Efficient than any other Boiler made. Bollers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueber Bros. & Co., California Jute Mills, and other places. .esu ni won 1ewo esto H 000,08

REFRIGERATING MACHINERY for Steamships, Brewerles, and Cellars.

STEAM HOLLERS of all descriptions.
STEAM HOLLERS of all descriptions.
STEAM HOLLERS of all descriptions.
STEAM HOLLERS—Steam Tachtes, Marine Engrines and Boilors, Screw Propellers, Centrifugal Fumps, Steamships, Steam Capterns, Care Whitches, own Whitches, own Whitches, own Whitches, own Whitches, own Propellers, Care Whitches, Charles of 120-steam Good Mill for the Alaska Mill and Mining Company; 60-steam Mill for Quartz Mountain Milling Company.

Mining Company. WILSON'S PATENT GAS-PRODUCER.

QUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Rosating Furnaces at all iduds.

AIR COMPRESSOR—Gold be Ower Transmission.

HYDRAULIC FUMPING: and Hoisting Machinery.

WROUGHT-IROW WATER PIPE a Specialty. Norm—Have just completed order for 35 miles of pipe of 4-inch iron for Spring Valley Water Works Company, San Francisco.

STEAM ENGLUES—Colles, Side-Valve, Poppet Valve Automath, Single, and Compound, STEAM ENGLUES for Passing Coast of the Compound.

SOLE MANUEACTURERS for Passing Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Celebrated "Heine" Patent Safety Boller (Water Coast of the Coast of the Coast of the Coast of "Heine" Patent Safety Boller (Water Coast of the Coast of the Coast of "Heine" Patent Safety Boller (Water Coast of The Coast of The Coast of the Coast of "Heine" Patent Safety Boller (Water Coast of The Coast Have just completed order for 35 miles of 44-inch

**MATER TUBE** 

Manufacturers and Sole Agents for the Pacific Coast for

**BOILER**,

MACRETH PARKY STELL-RIM PULLEYS—Fifty per cent lighter and 25 per cent cheaper than cast-from pulleys; will not break in transportation.

F. A. HUNTINGTON,

оке сказики

CONCENTRATORS AND ORE CRUSHERS, Centrifugal Roller TLIENT

steam Engines and Shingle Machines. Mining Machinery of Every Description,

SAN FRANCISCO, CAL. SEND FOR CIRCULAR.

No. 45 FREMONT STREET,

### First Premium Awarded at Mechanics' Fair, 1884, MACHINERY MINING PERFECT PULLEYS

STEAM ENGINES,

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc.

Sep Francisco, Cal SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco. GENERAL MACHINE WORK,

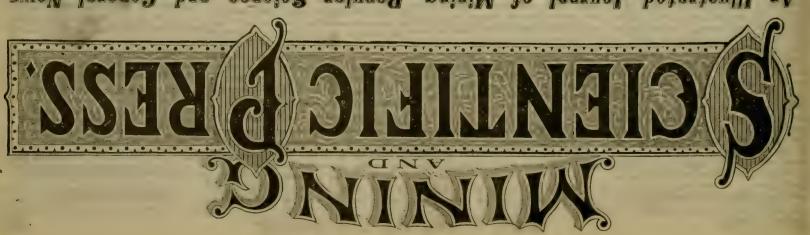
Medart Patent Wrought Rim Pulley

or the States of California, Vego and Meveds, and the States of Itano, we can be states of California, Vego and Merican.

East Balanced Pul. 3y in the World. Also Manufacturers of States and States of California, Use and Arisons.

East Balanced Pul. 3y in the World. Also Manufacturers of States Place of California, C

Nos. 129 & 121 Fremont Street,



### BK DEMEK & CO. Number 14. Illustrated Journal of Mining, Popular Science General

.IliM-qmat2 Ilam2 A .wal betet Law. SAN FRANCISCO, SATURDAY, OCTOBER 1, 1887.

There have been many inventions of late to

The area is one of extreme disturbance, comdid not need or care to go to the expense of the and stratified talas, traversed and cat by nubig stamp-mill of the common type. One of It is in this that we find the silver deposits. down as "liparite, liparitic tula and breecia, hist need san tled valo-enotebnes sidt le dtron

THE "DOUBLE ECONOMIC" STAMP MILL.

stamps in this mill ran. There are four shoes rapidity (300 strokes a minute) with which the by the great weight (1200 pounds each) and the of the old stamp is more than compensated for

merous fractures, along which often consider- these is the "Nouble Economic" stamp-mill shown in the cut on this page. The high drop

of these is the Freeman School of Applied Soiones, to be built at Inglewood, with an enthe shoes on the area on the shoes of the sh tions to build new branch colleges. The Southern California has accepted four proposi-THE Board of Directors of the University of

article and granA diligent search failed to dislege, with an endowment of \$100,000. The care no came or tappets to wear or be admaking in the clay of the series. Venture county, with an endowment of \$200,000. The care no came or tappets to wear or be admaking the decision of the series of no practical immaking the decision of the series of portance, except as it may affect cases adjusting.

There are no came or tappets to wear or be admaking and of the series of the series of the series of the series of the series. Venture county, with an endowment of \$200.

Glendors, near Azusa, with an endowment of 000, and the fourth is the Women's College at Ventura county, with an endowment of \$200,-

of our citizens use it successfully in stores which have a direct perpendicular outlet—that is, no elbows or horizontal pipe. up here in a material which heretofore has been considered of little consequence, although many a success, an important industry may be opworks. The Independent says : Should it prove be used as fuel in the furnace at the reduction boldt river, near Elko, are baing utilizad. A lot of the shale has been taken west to Reno to THE extensive shale deposits on the Hum-

county, are showing marked improvement,

JULIAN and Banner districts, San Diego

TUFACEOUS SANDSTONE

Pending further examination, this is designated area area blond and The whole area ish eruptive, which is later than the sandston sandstones and the desert, there is a light gray-

Calico Mining District.

in favor of their comparatively recent origin. finally the great masses of tufas, give evidence eruptions are probably younger than the ter-tiary sandstones of the desert, The form of the mountains, the often-recurring craters, and eraptives are met with, and from here on to-ward the Providence mountains, near the Col-orado river, they are very conspicuous. These station, almost in a line with the great eastern fault of the Sierra, liparite and other tertiary places granite, metamorphic slates and lime-stone masses are exposed. Finally, at Baretow long distance the most prominent feature; in bly tertiary sandstones of the desert are for a the Mojave river, nearly horizontal, presums from Cajon Pass northeast toward Calico, along gren's article on the "Silver Mines of Calico," the following geologic observations are made: Going In continuing our extracts from Mr. Lind-

spallow, dry lakebeds, smooth and hard as a floor. The complex north of the valley is predominantly composed of highly disturbed of Calico is covered by quaternary detritus, or The wide, nearly level Mojave valley south

and sand strate, derived from the former.

Assuming Clarence King's determination of
the age of liparites of the great basin to apply masses of liparite and tufas; together with clay

to this region—a very probable supposition—they should be regarded as early pliceene; the tules and and at the sand be parallel to the Shoshone lake deposits of king.

The structure of a part of this volcanic complex of the structure of a part of this volcanic complex is illustrated on the sketch map, which we next is illustrated on the sketch map, which we

loose and friable, the latter soft and greenish—form a zone along the frothills about \$ to \$ mile wide. The strike of the strate is nearly plex is illustrated on the sketch map, which we recently published, and the profile on this page.

The sandstone and clay strata—the former

the strata are inclined at very the trend of the footbills; to the east of Calico E. to W. at Calico, but changes gradually to N. to S. E. toward the northwest, following

-arry bas effictuate to esolded to esold the esold to esold esold to esold Street canyon they contain pebbles of liparite besides IlaW ai secalq emos tA vegular, adiqqib vafugar ot °04 mori elgas as is diuos pled and folded in an extraor-dinary degree; but, going anorthward, they soon become steep angles, and often crum-

while pliceene, or post-pliceene, folding is known in connection with the coast ranges of ere, according to the fortieth parallel surveye, but little affected by horizontal compression, and neually retain their original level position. is interesting. The pliocene strata of Mevada cone age, the fact of their extreme disturbance the clay. Granting that the strats are of plio and sodium sulphate. Some distance east of Calico it is said that borax deposits occur in sandstones contain much calcium carbonate candium sulphate. Some distance east of vegetable remains in the clay of the series. cover any fossils except a few intermediate

Southeast of Calico, interposed between the California from San Francisco southward.

may have been the understanding or the intent guage of this law is plain enough, whatever explanatory of the conditions under which it was passed or of the different opinions expressed touching the expediency of said Act. The lanto the various interpretations that are to be put upon the so-called Alien Act passed at the last session of Congress, nor yet to the statements It would seem as if there were to be no end

the end of the session, when all was confusion. Having been approved by the President and oversight due to the law having been passed at na saw txet eft ni noisivorq sidt to noitneter to farming and grazing lands. The members of Congress from the mining districts say that the not be extended to mining properties as well as to farming and grazing lands. The members of knowledge of mining matters was so slight that he knew of no reason wby its provisions should The man who framed this bill admits that his ti beteane odw seed it.

in its provisions, but this purpose was happily defeated through the ignorance and stupidity of they might have intended to include the mines nexataim asw seergned ; Ils ta senim edt ot its wording and evident intent, does not apply placed on the statute-book, now comes the At-torney-General of the United States and gives it as his opinion that this law, notwithstanding

to the mines, but that it ought to so apply for New York Engineering and Mining Journal, which holds that this Act not only does apply The exception here alluded to is found in the surd. Hardly ever before has any legislative measure been with such unanimity condemned. Meantine the newspaper press of the whole to war that gramming that this law does apply to define the state of the state o that body.

proved or reversed by the courts above, to add another courts, and their finding apthe reason that it is just as important that the sist in the interest of the mines should be retained in this

work, so far as expunging this as be accomplished Congress will probably have undone its case and render confusion worse confounded, Before this element of uncertainty to the

But even should Congress at its next meeting

the threat of lawsuits, except, perhaps, their act. of litigation. Mothing intimidates capital like wobade Intelad edt sbaeqmi doidw tevo bleft a ni opinion of the Attorney-General. Not often will the prudent man, with whole continents open to his enterprise, be likely to invest his means us, despite the reassuring but palpably unsound so uncertain and senseless, will continue to avoid investors, intimidated and disgusted by a policy phannels, will continue to run there. Foreign Toreign capital having been diverted into other has worked all the harm it is capable of doing. concerned. This bit of legislative blundering little good will it do, in so far as the mines are hasten to repeal this law in whole or in part,

ive prosecution.

ready for business. THE Portland Reduction Works will soon be Amador Oo., was \$11,000. THE last cleanup of the Arroyo Seco mine, TWENTY stamps more will soon be running at the Carlisle mill, New Mexico.

quirements as mills of the largest capacity.

omes out rewent lliw tant ene cale si ti

for small mines, but the manufacturers believe

of these mills are now in the mines doing ex-cellent work. The Economic is not only a mill every and in the the manufacturers helieve

and Tatum & Bowen, the manutacturers in this city, have also a suitable rock-breaker. Several

An automatic ore-feeder goes with each mill,

jured, by earthquakes. Cyclones, tornadoes and destructive gales of wind are things Cyclones, tornadoes has any person or property ever been ingarded as curious and interesting phenomena. Mo lives have ever been lost here, nor rare and withat so harmless that they are refeet every winter. Thunder and lightning are the higher montains varying from 20 to 40 foothills the snowfall is greater, increasing everywhere with altitude reached, the fall on inch in thickness seldom forms here, On the of this region, nor does it often lie for more than a few days at a time. Ice more than an avaller vewor ent ai alla reve wone to sedoni days during the year. Mot over five or six which falls during the dry season. There are 50 partially clear and over 200 wholly cloudless 50 to 60 inches, hardly more than one rest of the precipitation occurring in the shape of gentle showers, which in February, April and May are apt to fall only at considerable intervals. The annual rainfall ranges from the trainfall ranges from the control of the contr

its Manifold Capabilities and Its Probable Future.

venture, the effete for excitement and the scientist for study, while the over-worked, the weary and the crushed will fain cry out, The atrong, opportunities for exercise and adbe likely to find here what he most longs for. their desires or opposite their tastes, will each so inviting to repose, visitors of every class and kind, however varied their wants, capricions these sylvan retreats so suggestive of ni bevirra Atata and obleg rate. Arrived in springs and sanitariums of California, we are constrained to say that in our judgment this realm so engirdling, Mount Shasta meets the requirements of a great popular resort as fully requirements of a great popular of the same noted pleasure retreats, seaside homes, mineral After having visited every one of the more

and all the other devices that tend best to great hostelries and elegant villas and cottages een spread abroad, the peoples of all lands this great solitude at the North. Not difficult is it to forecast the horoscope of 'Alabama ! here let us rest.'

Northern California and Southern Oregon, has This hill country, including the whole of toned industry will pervade all the land. hills and canyons and the voice of a manyshrick of the locomotive will be heard in these tlers will multiply on every hand; when the man, the vine-grower, the orchardist and others of economic habit, will begin to invade this beautiful wilderness; when the cabins of setmore distant future, a time when the lumberhere be provided, We foresee, in the not much lliw , tanemesume has noiteereer stomore of has facilitate exercise, insure comfort and health and baths and bowling greens and tennis lawns, rustic bridges will span the streams, and arbors, when wagon-roads and bridle-trails and serpen-tine walks will be laid out and built; when on all the more eligible sites will be erected; will be turning their footsteps hither; when change of scenes and conditions. We foresee turbed realm, the social of the adventurous silence, the work-ground of the poet, an early painter, the dreamland of the poet, an early painter, the dreamland conditions. We foresee for this now sparsely populated and little dis-turbed realm, the abode of loneliness and

been made easy of access through the construc-

Toe and exhausting and favore to a common of the divine strictions and every of the divine strictions of the strict of the striction of the st did there exist an urgent necessity for their early completion. These northern lines con-Not here, as in the case of the overland roads fmedy votae bas nister to tever deny von yedt companies to sid them in the construction of these roads, have they not fairly earned and do General Government been granted to the above this time has remained unpeopled, as it might have continued to do for the next 50 years but for these roads. If some lands have by the ough. They open up to settlement and traffic territory of great extent, but which up to Iy pushed shead with unexampled energy, have been built at great cost, a good deal of the country traversed by them being exceedingly your I They are not not not a continue to the fact. Now just completed. These roads, though latter-The California & Oregon and the Oregon & California Rallroads,

and pure.

spirational and grand, are the views presented in the tumult of hills that constitute Equally varied, if not so far-reaching, in-

The Piedmont Region of the Mother Moun-

much as we will; climb it to its top-not an ing a very presence, so seemingly near and impending. There is about this mountain a fascoination not readily dispelled. Gaze upon it the view, Shasta everywhere visible, app and charming, magnificent and startling, opens which man well may envy though he cannot imitate. Turn where we will, something new lar glades opening far into the woodlands, all of generous sweep but not too prim or over-sym-metrical. There are sunny lawns and irregucourses. There are walks and alamedas with retar of wild vines slong the water stretches of stately forests, and clumps of trees and seattered groves with delicate shrubbery, with their dainty fingers." There are here two medt begolfses bas shgir thein out emoo bad seirial edt " eveiled bagim evitaniga curved and deftly shaped that even the unimsoftly rounded knolls, and dells so gently exacting lover of mature could desire. Intermingled with them are cliffs and bluffs, and deom edt tedt gaitaew gaidton ellid twollid every conceivable shape, there is among these well as majestic and grand. Many of the land-scapes are little short of an enchantment, Eroded by a thousand streams and tumbled into And which, it may safely be affirmed, are without a parallel in the great Cordilleras of either Morth or South America, there being berre so much that is subdued and beautiful as well as a manage of the great in the subdued and beautiful as well as a manage of the subdued and subdued and search as a subdued and subdued and subdued as the subdued and subdued and subdued as the su

eeze, becomes a harpstring musical with the sing perpetually a song of peace, while every pendant leaf of the pine, moved by the passing mind and please the eye. The murmuring waters delight the ear, as well as objects to interest the the sea. And there are here sounds to soothe and streams innumerable, which, eddying about mossy rocks, go rippling over their pebbly beds or linger in deep, placid pools on their way to Leaping in cascades down its cold sides are sasy task—and yet we regard it with the same reverential feeling as at first,

The Climate and the Woods, With Their Health Giving Odors. glory of the mountains.

The climate of this region is simply perfector, So healthful are the conditions that

amore or plane tree, the buttonwood of their etreams in this wild and virgin region the sycof to gaivorg band of emos of yof s ed fliw yet been there to classify and name them. and nameless, the man of science having not field of botanical research that remain unknown there are in this little explored and pristine giving out also delicious perfumes, their forms and their foliage being withal exceedingly beautiful. Moreover, some trees and flowers the state of and the wild syrings; some of these shrubs names, such as the manzanita, the chemisal and the sweet gale myrtle, the silver fir and the incense bearing cedar. And shrubs there are, too, with equally pleasant and euphonious and poetic names. There is here the madrona health-giving odors. Many of the trees, bear soft sides so exhaling a balaamic fragrance, bear soft the incense of the piney woods and redolent of and springlike, being everywhere laden with The sir, except in higher mountains, is balmy wone bus frost structus one of perpetual frost and snow. course of a few hours from a region of perendred miles of this spot. In so far as temper-ature is concerned, this can be so readily varied by change of altitude that one may pass in the the least germ or taint of disease. There is hardly an acre of malarial land within a hunmosphere is a tonic. There lingers not in it be expected to make her home. The very attion, So healthin are the conditions might hygeis might here, it anywhere in the world, Hygeis might

shout the sources of the streams or falling from the clouds, it is free from any mineral, vegetable Not difficult should it be for the mind devout pavilion standing against the sky, does he note it more closely and feel moved to inquire purity itself. Coming from the melted anow The water that runs among these hills is and it begins to take on the shape of a vast boyhood days; also the quaking asp, with its slender trunk and its ever tremulous leaves. pear; not until he has approached it nearer be gets of Mount Sheats, so like a hazy cloud

these several necessities and requirements. place that seems to meet in largest measure California, The best that can be done, then, is to look after and if possible discover the compass a great deal; more, in fact, than we heaven longed for by the austere pilgrim and colon to find in any one locality even in the stern covenanter—so awe-inspiring, cold

spot, it is not our purpose to underrate the aint to villidigile eht villi os gaisrobai aI and the subline, the picturesque and the beau-tiful, are strangely intermingled. wild and broken country wherein the rugged Standing near the northern border of the State, of and about which there extends a year area of

outh, the traveler little heeds the first glimpse

have an almost perfect view of the highest por-

it going north, it being in sight from the cars besseq even the railroad after we have passed

Alpe or the Andes. Shasta is seen to best adin extent or grandeur by any to be had in the

not being seen. The views obtainable from many parts of this mountain are not surpassed

away of the rim of the crater once at its top,

its double summit, formed by the breaking

takes the shape of an almost perfect pyramid,

way off from either the north or the south, it

of all our California mountains. Seen a long

Springing to such regal hight out of this girdling sea of hills, snow-capped Shasts stands the most conspicuous, symmetrical and imposing

great central cone, the top of which reaches an altitude of 14,444 feet above the level of the

sand feet high, sink into mere knolls deside the

innermost of these hills, though several thou-

further on into long, sweeping waves, which, gathering force as they proceed, break in great billows shout the base of Mount Shasts. The

very high nor yet very steep are these hills on the west. The dead plain of the Sacramento rising at first into gentle undulations, swells

retreat. Though exceedingly picturesque, not

Its freshness and beauty, will present a happy

Towering Mountains and Its Billowy esting.

long for a place where he can escape from the noisy world, with its whirl of fashion and its

quiet and repose will often tire. Often will he

public. Of the more populous portions of Cali-fornia, with their dust and din, the seeker after

for the scientist, the tourist or the traveling

medicinal aprings are more for the invalid than

stop generally suffices, while the warm and the

restricted, it being impossible to see much of interest outside its walls. There, too, a short

Yosemite is a unit with views comparatively

caring to stay there very long. The vale of the

But the Big Trees of Oalsverss and Mariposs are things to be visited, looked at and left, few

established, perhaps, as are those of Paso Robles, Gilroy, or the Geysers.

that awful gorge, nor are the medicinal proper-ties of the mineral springs, of which there are a number scattered through these hills, so well

lofty as those that precipitate themselves into

and deep, yet none so profound as the Yosemite abyes. There are here waterfalls, but none so

here forests of big trees, but none so gigantic as those that stand in the Calaveras or the Mariposa grove. There are here chasms, dark

particular all others in the State. There are

not pretended that this region excels in every

great capabilities in the above direction. It is

California may justly lay olaim as places of public resort. We are only speaking of a remote, primeral and unfrequented district, which, taken as a whole, seems to possess ware in the above direction. It is

attractions to which many other localities in

To such this north country.

with its many climates,

The views obtainable from

all the way up to the Oregon line.

innatanom and to anoid

Coming up the Sacramento valley from the

In the Vicinity of Mount Shasta,

That place will, in our opinion, be found

**CORRESPONDENCE.** 

We admit, unindorsed, opinions of correspondents,-EDS.

The Mountains and Canyons of North-

[Written for the Press by Dr. Hener De Groor.

A Future Recreation Ground and Sani-tarium of the State.

ern California.

other feat of endurance and daring for the purvough and imposing in nature. There will be those prone to climb mountains of perform excitement and exercise, while others will de-light in quietude and repose. There will be the admirers of the soft and subdued and of the Some will require means and opportunities for those in quest of mere recreation and pleasure. bas erutnevbs to tasup ai escht-srees-tagis tourists and scientists, health-seekers and sulted, for, in determining such point, these are matters not to be overlooked or lightly considered. There will come to this retreat r number of these visitors being conmany days. What looslity, if any, promises to combine the most advantages for a retreat of this kind, the wants, tastes and desires of the

diversified scenery, shall be found the most suitable place of abode for these strangers who,

where in this broad Hesperian land, with its manifold climates, its varied products and its

Such being the case, it may well be inquired

search of health, pleasure, reorestion or rest.
These be the people who, by their presence, enrich a country hardly less than they who come to stay and to toil.

by inviting hither that very considerable and an interest should be also who go along in

fail to greatly promote her material prosperity,

While this feature may not so much add to the permanent population of the State, it cannot

tion-ground and sanitarium of the whole world,

fornia, by reason of her peculiar climatic conoverlooked—this advantage and special feature of attraction consisting in the fact, that Cali-

large class of visitors its greatest attraction, has received too little attention, having very often been but slightly alluded to or wholly

that will in the years to come constitute to

advantages pertaining to this country, and one

we conceive that one of the most noteworthy

But in all that has been so said and written

not often have these accounts been much over-drawn, so little likely is any one to employ the language of exaggeration when speaking on

have been most of the accounts given of them,

soil. In describing these and much more that might be claimed for this State, glowing as

lence of her climate and the fruitfulness of her

sources, the grandeur of her scenery, the excel-

globe. And well does she deserve all that has been said shout the extent of her mineral re-

say well-advertised, countries on the face of the

And so California, as regards these, her more salient features and obvious sources of wealth, stands to-day one of the best-known, not to

general recognition and a wider notoriety.

State having served to gain for them a more

ing the past few years in the metropolis of the

cations, civic, soldierly or industrial, held dur-

and published far and wide, the several convo-

great forest growths. In almost every spoken language these things have been written about

outstretched plains, her orange groves and her

orohards and her vineyards, and have even heard something of her deep-fissured and steep-walled valleys, her majestic mountains, her far

ness of her gold-fields and her wheat-fields, her

formed as regards the extent and productiveboth at home and abroad, are pretty well in

facts that have long since and everywhere be-come well known. Most intelligent persons,

climate and many other natural advantages, are

That California is a country possessed of great agrees, a fine

ditions, is destined to become the great recre

pose of invigorating their bodily powers or ex-bilarating their spirits, with those, again, who will seek to reach these ends by methods less temporary homes and even perhaps tarry for in numbers multitudinous, are at no distant day coming here to sojourn—some to make

California Great in Almost All Things.

ourselves fully appreciate or even understand the many advantages that pertain to Califor-nis; and it now, having discovered so much a spice of enthnesism may be ensterned into variating, then are we menable to the oharge. But the fact is we have curselves been taken set partly by entprise. Not until recently did we wenterly a surprise of partly by the partly of the set of think we are sadly given to self-landation. If From the much that our home press has been saying lately in praise of California, it is greatly to be feared that people abroad will begin to

that is new, we talk with more assurance than to others may appear seemly, this is but natternal and should be overlooked. Having through ignorance of its resources tailed for so many years to duly advertise the State, it is proper enough that we seek now to make up for lost time.

to the contribution of the

OPENING UP THE SANTONION, Son, 1887, 1887, 1887, 1888. A Stan Francisco, Gal, Sept., 1887, 1887, 1867,

Arecus Dally, the general manager of the Araconda Dally, the general manager of the Araconda, is now reckoned among the million-sires. Like most of the bonanza mining men up through the regilar gradations to his present of the position. He is considered one of the best practical judges of mines on the coast, and his present of the pre

MUTIMONY.—Mr. S. Bousebey presented us on Monday with a 40-pound cake of star artimouy, taken from his mine at San Emigdio, and retained there to the highest possible degree. He dired there to the highest possible degree. He is now refining at the rate of about 400 pounds is now refining at the rate of about 400 pounds per day, and expects to he of a superior qualitymore in the market is pronounced by experts to be of a superior quality to anything of the kind in use, it being the number of the superior quality fact has ever been offered. Mr. Boushey tells us that the cost of working it is fined metal, and the ore lies so near the surface of the ground that the cost of working it is omparatively ight. Mr. Boushey unfortunately in the ground that the cost of working it is metely has not sufficient thanks. Boushey unfortunately to the degree that the great shorn dance of metal would warrant,—Barkensheld dance of metal would warrant,—Barkensheld.

leading through countries as rich in agricultural wealth and as varied in accenty as any on the continent, the continent, the traveler passes through the rich agricultural countries of Contra Costs, Solano, Yolo, Teherma, and the almost equally rich mining country of Shasts. For nearly 200 miles in the valley of the Sacramento he rides through an almost continuous wheatfield, the confinence wheatfield, the couly interruptions consisting of orchards and only interruptions consisting of orchards and eat of futits. Coming from Portland the traveley at the Willamette, no less famed for the wheat farms and its orchards the trace of the Willamette, no less famed for the wheat farms and its orchards the Sacramento, the next 100 miles coming cuth remember, the next 100 miles coming south occuring a region of diversible divising and valleys, convering a region of it rich in mineral and agricating a regions of its rich in mineral and agrically against securing a regions of its rich in mineral and agricative regions of its rich in mineral and agrically against securing a regions of its rich in mineral and agrically against securing a regions of its rich in mineral and agrically against securing a regions of its rich in mineral and agrically against and weat securing a region of its rich in mineral and agrically against and spring against and spring and spring against and spring and spring against against and spring against and spring against against against and spring against This Piedmont region can be reached either from Portland or San Francisco in about 12 hours ride by rall, the journey from either leading through countries as rich in agricultlarge, compared with the outlay they have in

ver the University of the caryon in the State of the Caryon of State of the Caryon in the Caryon of State of the Caryon of State of the Caryon in the Caryon of Ca

The Theory of Cloudbursts

Its that two ourrents of electricity, particularly in vur higher metallic altitudes, get up a sort of a footrace in a contest to find out and prove a footrace in a contest to find out and prove in a footrace in a contest to find out and promounting which can get to the arming the state of a high mountain first, and, being of a very thirsty nature (as is a well-known fact regarding electricity), and the race across the horizon being a long and the race across the horizon being a long and the one, they come together terrwhack and spill every. They come to the foot and the foother which my pious father, who was a Methodough and the consideration of the contest in a father of the contest of the contest

"God moves in a mysterious way the bod moves in perform; His wonders to perform the plants His footsteps on the sea Man indes upon the storm."

He plants His clossifiers of pening to the coming a satisfied that my father's complete and more satisfied that my father's solution of scientific and pecoming cach day more and more satisfied that my father's solution of scientific view my own errors long anough to be otherwise wise wise than in my "own conceit," I will bead option parents live seems in the state of the collection of the collection.

I had another interesting to me at the time, very—interview with a cloudburst, which I will probably respectively.

I had another interesting to wery—interview with a cloudburst, which I will probably respect to the country. At a cursory glance is but a form of the cyclone, modified by the short of the country. At a cursory glance is but a form of the cyclone, modified by the short of the country. At a cursory glance had been the great ranges of the Rocky and Sierra Mewall remember that the cyclone on the country between the great ranges of the Rocky and Sierra Mewall remember that the trein spone that territory between the great ranges of the Rocky and Sierra Mewall remember that the cyclone on the country of the would be great ranges of the Rocky are in the ferritory between the great ranges of the Rocky and Sierra Mewall remember that the trein such tearing to eaupose that the retritory between the great ranges of the Rocky are in the foother on the would be struck by a regular cylone. To the would be struck by a regular cylone of the would be struck by a regular cylone. To years in the ferritory between the great in the ferritory between the great in the tear the south which seems to be deterred by the levity which seems to be obtained by this writer. The leaves to be deterred by the levity which seems to be deterred by the levity which seems to be obtained by the levity which seems to be obtained by the levity which seems to be deterred by the levity which seems to be deterred by the struck is a bistoric seet.

I would say that it any really scienting contents to be deterred by the seems of the seems seems of tigate that the many and then, being possessed of a good memory (es, mark you, most investigate that a good memory (es, mark you, most investigators are so possessed), he would carry bits conclusion, whatever it might be, forward investigators are so possessed), he would carry That is the way I, myself, became owner of more the case, they formation outselves as a was sometimes. I fall over them, and a misse, it has not a misse, they contribute the case, they fell a cover land was a marked by the county, Nevada, and laying the foundations of the Kutar Press rether miscalaneous. Well, here we go segain. When I was mining in Mye county, Nevada, and laying the foundations in the the Mye county, Nevada, and laying the foundation of one, roundations of the formation of sear a long, voundations of the county of was mining a long, toundations of the distance on the county of the condens of the distance of the distance of the Unayother of the Borne of sear along, there loomed in foundations of the distance I was abortened the colear desert along, there it cole the boundation of last winter still not thawed, and though I counced the their day or the year, but deep for the distance of the Diamondation of substances as I then Diamondate the soundation of substances and the several sores that any of the colear desert abmosphere, 50 to 75 miles of the distance I was abortening. The nearness at the colear desert atmosphere, 50 or 70 miles is selected to be just abortening the more up the terms of the colear desert atmosphere, 50 or 70 miles is the teach of such the colear desert atmosphere, 50 or 70 miles is the because in the core in the core of the condens of the clear desert atmosphere, 50 or 70 miles is the teach of such and the farmes to the condens of the colear desert atmosphere, 50 or 70 miles is song much to know the training the music shoets to such when I leaned, so the eye and the several sore of one of the several sore of the colear colear of the colear of t

**Some Theories.** Conjectures Concerning the Truth of

elements the earth must contain all the gaseous EDITORS PRESS:-The atmospheric ocean sur-

mechanical causes. Our planet is really an im-mense laboratory in perpetual operation. Therefore we look at other planets and stars

or sums through a geacons atmosphere contains or sums that the telements of contains our globe. This face of metal a geacons atmosphere contains on the spectrum analysis when used to define the composition of other places of metal would warrant, Bakersfield from the spectrum analysis when used to define the composition of other places of metal would warrant, Lamight cause the same illusion as region, and the wastest the West Indian birth attention of the places of glasses can define a marginal through which we examine them.

This despends through who were the same illustration as regions of the same illusion as the colored glasses of the articles of the material from the stronger of the same illustration as the colored glasses of the same illusion as the same illusion as the same illustration as the same illus

And now, whereas, in remote former times—

to fine the context of the context of

\* \* \* \* \* beautiful star, "Thou art so near and yet so far,"

that young raralist was possessed of an ob-servant turn of mind, he would arise and inves-tigate that phenomenon, and then, being pos-

a rural boy-a stout boy-at home, walking one way while looking another way, when he fell over a log? You did-all right, Now, if

EDITORS PRESS :- Did you ever take note of Dr. Gally en Cloudbursts.

some portions of it rich in mineral and agri-cultural resources, and the whole well adapted for growing almost every kind of fruit, grapes

How Reached and the Country Traversed.

### The Gold Product.

duction of that metal from the mines of the U. orq and to estimate estimate as ta yarivira lo session of complete information for the purpose Bareau of the Mint claims now to be in pos-\$3,000,000, In the case of gold yield, the against \$31,800,000 in 1885, an increase of over Mint, in his report just issued, says the pro-duction amounted to \$35,000,000 in 1886, the United States was greater last year than in any since 1880, and almost equaled the pro-duction of that year. The Director of the The production of gold from the mines of

the remainder, \$18,525,724, was refined gold bullion received from refineries. Of this \$15,009,613 was unrefined bullion, and gold, of the coinage value of \$35,535,337.88. deposits at the mints and assay offices of the U. S. during the calendar year 1886, classified as of domestic production—bullion, that is, which has never before been deposited at any offices of the M. The mints of the season of the M. The deposits of gold bullion, excluding re-

mints as domestio, \$520,153. The estimated production for 1886 is therefore \$35,057,889. contained in their refined bars classified at the es seirenner etsvirg egraf yd betroger blog ngie for manufacturers and jewelers, \$650,000; total, \$35,578,042. The Director then deducts forerad otni ebam need gaivad sa seirender etar Montana, exported as " copper ore," \$186,959; gold of domestic production reported by 29 priduced by the Anaconda mine and Parrot Oo. of orq requos giq bas !estem requos ai benistace Mint or assay office bars, classified by the custom-houses as "domestic," \$1,205,746; gold mints and seasy offices of the U. S., classified as of domestic production, \$33,535,337; gold bullion exported from U. S., other than U. S. mate by taking: Gold bullion deposited at the The Director of the Mint makes up his esti-

increase shown by the aggregate made up of the amount deposited at the mints, the amounts This value corresponds almost exactly with the showing from the carrying trade of \$3,167,668. веев \$26,393,756, яв іпотевае вссотding to bis was estimated by the same authority to have The production for the calendar year 1885 . \$29,162,62\$ 3881 ni need doubt of tevit indesiM express companies, railways and other convey-ances. Mr. Valentine estimates the gold pro-duction of States and Territories west of the of the country, their own and that of other Valentine of Wells, Fargo & Co. This statis-tical contribution is based on the carrying trade here shown with the estimate of Mr. John J. It is interesting to compare the production as

posits at mints and assay offices are delivered by hand or private conveyance. The mails are also used to some extent. ments of gold and silver. Many of the de-The express companies are, however, no longer carriers as formerly of the entire shipexported and that used directly in the arts.

buying \$100,000 a year, ship entirely by mail to San Francisco, while the two largest pro-Boise basin the two largest purchasers of dust, to mints by express, some \$100,000 had been sent to San Francisco by other means. In the the sasayer of the United States Assay Office at Boise, Idaho, who kept a record. He found that at one camp where \$37,000 was forwarded The Director of the Mint cites the report of

en land bit of seitinutroqqo retted bas emit nore nearly correct than ours, you having more your fiscal reports for the U. S. & Co. furnished the only information obtain-able." In another letter he says: "I deem When we began these statements, Wells, Eargo of our statement at the close of the year. by reason of the necessarily hurried conclusion approximates the actual output than ours doe effect "that the Government report more nearly ducers carry it there in person.

It is, moreover, impossible for the carriers to tell accurately the proportion of gold or silver in the bars they carry. Mr. Valentine himself in the bars they carry. Mr. Valentine to the accurate to the Director of the Mint to the accurate to the Director of the Mint to the

end of each year. pize, for it is received just when wanted-at the & Co.'s statement as the authority to rec many people continue to consider Welle, Fargo tics, but they come out many months after the end of the year. The statistics would be more valuable, if fresher. For this reason The Mint reports are quite full, as to statis-".voins we now enjoy."

> should it be our pride to live in the hereafter, nor rot it of the inheritance that justly belongs as possible. As we love to live in the past, so are to take our places with as little impairment tory, so should we hand it down to those who

### Destination of Gold Bullion,

gainfier as carry on the operation of refining seesy office at New York, or to such of the duction works. It is then sent for refining to the of unrefined bullion turned out by smelting or reties are afforded for the valuation and purchase ion centers, at which public institutions facili-S. sassy offices, loosted with reference to bullabout: First, directly through the several U. whole gold product of this country is brought of the U. S. as to weight and finences, or for verification and designation as U. S. bars, Such an ultimate destination of substantially the or manufacture into fine bare bearing the stamp try eventually finds its way, either directly or indirectly, to the several institutions of the Mint service of the United States for coinage, The gold produced by the mines of this coun-

.egsagico tot to stisog exchange, A large proportion or the gold reserves of the U. S., amounting last January to 851,431.262 in value, are retained in the same form, available either for payment of gold deform, available either A large proportion of the gold r ngierol lo sesoquuq rol eisequ esalqer ylegral in bars officially attested as to weight and fine-ness. Stamped U. S. bars of different values such of the coinage mints of the United States as have also an acid refinery, may be returned institutions of the mint service, or, when deposscription is likewise purchased by any of the Second, ultimately the same is the destina-tion of the refined gold—the product of reduc-tion works with soid refineries of their own, or of other private refineries. Gold of this de-

ly, most of it is produced in the State or Terwhich reaches the mints or assay offices directduced. In the case of unrefined gold bullion In the case of unrefined bullion, which is generally of domestic production, depositors, are required to give the State or Territory, mine or district, in which the bullion was productive that the state of the sta

not for each year, not only as foreign or do-mestic, but also as to the States, Territories and countries from which the bullion was derived. ant, has prompted them to classify, at the request of the Bureau of the Mint, their prodactions with the Mint are frequent and importbullion in the United States, and whose trans gainner at begagae anosteq edt to tiriga oilduq states that happily for statistical purposes the Canada. The Director of the Mint in his report try except from Mexico, British Columbia and Very little unrefined gold comes to this counposits under the name of the refinery whose stamp the bars hear, and classify all refined hars from private refineries as domestic gold. tioe of the Mint Bureau is to group such deof production, whether domestic or foreign, or the exact locality where produced. The pracof mints and assay offices to learn the sources vate refineries, it is impracticable for the officers ritory where it is delivered. With bullion received from the leading pri-

pension over the dams to cause injury. enough light material would be carried in sustect the rivers from filling with slickens, since ing dams that could be constructed would pro--nisrteer on tant belief sti bessergxe noitsicosse would not prosecute the hydraulickers. The cure a promise from the association that they tion was passed denying the request, This is the second attempt that has been made to se-After much discussion a rethat the company build dams to be approved tions now held against the Slate Oreek Hy-draulic Mining Co., be removed on condition seked in behalf of his clients that the injuncstor W. M. Stewart appeared at Maryaville, before the Advisory Board of the Debris Association, composed of 40 leading farmers. He No Compromise, -On the 26th inst, ex Sen-

Victoria and Vancouver. Bids have been re-quested, and it is stated that the preference the size of the Premier to run between this port, shout to have built another steel ateamer double for whom the steel steamer Premier has been built by the Union Iron Works of this city, are Canadian Pacific Navigation Company (limited), It is learned on good authority that the

> Metals. Economizing Our Store of the Precious

> and depositing them on the surface. at the water fresh particles of these salts newal by bringing up from below or eliminatexhausted or partially depleted, undergo renedw, muibos to ebloride of sodium, when especially true of certain salines and also of bog iron ores. Most beds of niter, borax, the cardowed with this recaperative power, this being emptied of their contents, they can never be refilled—when dead they are dead forever.
> There is a class of mineral deposits that are ennot possess the property of self-repair; once erally known, and, where known, more generally remembered, that metalliferous veins do and wide of the truth. It should be more gensome extent obtain, both being alike misleading pression that the wasteful methods employed in working them is not matter of public concern-ment, The fact is that both these ideas to which we have in many instances worked our deposits of the precious metals, inchoistes the existence of a wide-spread belief in their inex-nai trackers. The manufacture is an equally prevalent im-The careless and even reckless manner in

> future to do her work in; wherefore she need nity of the past so has she the eternity of the her methods. With nature time counts for nothing, a day being as a thousand years as a day. As she had the eterless task interests us not except as students of -bae red sidt tadt ylwole os ao seog noitatilidad strange alchemy, possesses the power to refil the ore-bearing veins. Or if nature, with he for awhile, again awarm with vitality. Not so barrenness recover with rest; fisheries exter-minated, the work of destruction intermitted cut down grow up again; soils impoverished to This rule also holds good in other provinces of nature, both animal and vegetable. Forests

this purpose the currents of terrestrial magnet-iem, sublimation, infiltration, and possibly other agents not yet revealed to science. per and the other useful metals, employing for on the face of the deep, we will find that nature had already begun her work of filling the earth's rents with gold, silver, iron, lead, vopearth's rents with gold, silver, iron, lead, vopfurther—back to the time when darkness dwelt If we go back to the time of the deluge, and be in no haste.

perhaps even in our day, when they will beour metalliferous deposits, more especially those of gold and silver. We must economize these forms of wealth, or the time may arrive, lesson of frugality and care in the working of know little or nothing, all of which teaches the birth. Of the exodus of the Cometock, we are pretty well informed, but of its genesis we The origin of our precious-metal deposits is, in fact, lost in the midst of the past, nor history nor legend going back to the time of their high Off the songest to the time of their embarking on the Argo, sailed for Colchis. ground, where he found it long before Jason, gold picked up by Marshall was resting in the on departed for Ophir, and the first piece of barying-place the cave which was in the field of Machpelah, paying therefor 400 ehekels of silvornis had died and were buried when the ships of Soloward died and were buried when the ships of Soloward was the ships of Soloward was also were the subject of the spin silvorning and the spin silvorning sp these metals existed very nearly as we find them to-day. The great Washos lode was about filled up when Abraham bought for a It may well be that even then the deposits of

and transmitted to us this metal-pearing terri- will be given to the Union Iron Works, preceded it, so does it owe something to its successors. As they who went before acquired eration is under some obligation to those who to squander these resources. In some sense we are the trustees of the future. As every genfrom our immediate interests we have no right always and everywhere an industry that does so much to foster and energize all others. Aside band them with a miserly thrift, cherishing has been given to utilize these products care-fully and wieely, appropriating them only as his necessities require. It is our duty to husand other repositories all the same. To man it but she goes on eliminating these metals from sources and storing them up in the fishering occur an overproduction of silver and copper, the process of their deposition. There may her work. We can neither hasten nor impede her. Gold may be scarce and a dearth of quickellyer impend, but she will not quicken come alarmingly scarce.
In conclusion it may be observed that as not conclusion it may be observed that are not delay as a start of the property.



**DEWEY & CO., Publishers.** 

Office, 220 Markel Sl., IV. E. cor. Front Sl., S. F.

Terms to Subscription. 83. New subscriptions will be declined without cash in advance. All arrestages must be paid for at the rate of \$3.50 per annum.

Advertising Rates.

Per Line (agate).

Per Line (agate).

Per Line (agate).

2. 2. 2. 80 2.2.0 5.00

Per Line (agate).

2. 0. 4.00 10.00 24.00

One line (agate).

2. 0. 5.00 14.00 24.00

Targe advertisements, notices appearing in extraordinary type or in particular parts of the paper, at special agate (agate).

Targe advertisements, notices appearing in extraordinary type or in particular parts of the paper, at special rates. Four insertions are rated in a month.

London Acenт-Alfred E. Ann, 63 and 64 New Broad

Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Entered at S. F. Post Office as second-class mail matter Our latest forms go to press on Thursday evening.

SCIENTIFIC PRESS PATENT AGENCE, A. DEWEY & CO., PATENT SOLICITORS. A. T. DEWEY.

Saturday Morning, Oct. 1, 1887. SAN FRANCISCO:

### TABLE OF CONTENTS.

rive box to tentile 90, 147, 2—10 sector for recently 0.1 First be to-comociaves 218.

CORRESPONDED (Salfornie, 210 Dr. Gally on Cloudrasis, Confecuración C EDITORIALS.—A Much Buffeted Law; A Small Stamp Mill; Calico Mining District, SOB, Pessing Events, Bocomonisting Out, Stove of Precious Metalsing District, Soli Fuel in Progress Twest of Bull westing Metalsing to State Trong Locomotives Is 18.

Light Experiment of Gold Bullion; The Gold Freduct, SIS, Locomotives Is well with the State State Locomotives Is a propriet of State S

Some Theories 211.

MIGORILA AUGOUGA - 231i. This Great in Almost MIGORILES - 231i. The MIGORILES - 315 miles of the Midorite of the Midorite

Goal in the Northwest, SIA.

Cosl in the Northwest, SIA.

USBFUL INFORMATION.—Paper-Making; Migravion of Animals; For the Ladies; Utilizing Leather

Restion of Animals;

USBEROL MAY Chee College Of Manals; For the Ledies; Utilizing Leather gration of Animals; For the Ledies; Utilizing Leather GOOD HEALTH.—For to leden Oake; Healing Disease Leden College Confered Conference of Insect Stings; Effects of Lesen Colleges; How to College Confered Fine Colleges; How to College Sulmars of Insect Stings; Effects of Manual Colleges; How to College Sulmars of California, Nevada, Arizona, Colleges of Laho, Mouring, 216-17.

MINUNG SULMAR Y—From the value of Mothings, Assessing the Colleges of Mothing Sulphanes; Albertz, Prancisco Stook Board, Motices of Mothings, Assessing the Colleges of Mothings of Mothings and Bulling Shipments, S.S.

## Business Announcements.

en Bee Advertising Columns. Tunnel Contract to Let—Gillespy & Childs. Mechanical Photographers—Runnels & Stateler.

### Passing Events.

of reduction works in such centers is bound to miners have a better chance to dispose of their ores, but those in Idsho as well, The building ern section of this coast. Not only will Oregon Portland will be of great benefit to the north-The satisfinent to transfer set as a received with the satisfic transfer and transf

better condition than ever before. The developments are thus far mainly conducts capital southers sentially experienced in the State, where much capital is being by the factor of the f The petroleum interests of California are in on this coast. have a beneficial effect on the mining industry

companies to run tunnels under private grounds, will be found of interest, though not of a tenor column, as to the right of miners or mining The legal decisions which are given in another are being built, wells are being opened, and the production is increasing from month to month.

in the more mountainous regions of the coast will have to go into winter quarters and give up their work for the season. to please the mining community.

It will not be long now before the prospectors

mining ventures, is experiencing some bad luck this seemn, which is only a natural result when the speculators there stood ready to buy almost ST. Louis, that last year went wild over

, sanim mort noitnetts elderabia THE Sheep Mountain country, a tributary to the Ketohum region, Idaho, is attracting con-

In applying this apparatus to an American was rein applying this apparatus to an administration was required to adapt it for use here. The difficulties which were encountered have apparently
all been overcome, and the engine to which it
for some time.

Of its working, it may be said that its fuel is smokeless and cinderless. The firing consists simply in the manipulation of a hand wheel,

periments on the Pennsylvania rallroad show-that the practical difficulties of burning petrothe apparatus described. This fact and the exwhich regulates the supply of oil.

On the Grazi-Tearitzin rallway, there are
now 143 locomotives burning petroleum with

In view of the comparatively high price of cost on this coset, and the increasing development of our oil interests, this subject is a very dans lio to leum have been overcome. The only question which remains is that of the relative economy

troducing oil for fuel in many places. Should it be used in locomotives, there will be a large-ly increased demand for the oil, іщтеляє втогає tanks are to be put пр ітте-diately. The Pacific Coast Oil Co. are now inhere for enlarging the system in this ofty, and manufacturing establishmente are making seesm with oil. Arrangements are being made important one. In Lee Angeles many large

#### A New Petroleum Find.

that many wells are sunk which yield no return, ports the developments of more importance than was at first thought. Still, he remarks een investigating the oil deposits, and he recomes more assured. We gave in the Prezs recently the observations of Mr. W. A. Good-year, geologist of the Mining Bureau, who has 

.lio gaiteaimulli for marking sheep. Hearing of these springs, the spot was visited by Henry Raymond, not long since, and samples obtained which were found by H. G. Hanks to yield 67 per cent of abont 23 miles east of San Miguel, the native product of which was utilized by sheepherders examination of this field, but will shortly do so. For 30 years certain ter springs have been known to exist in the Choleme valley, Waite informs as as exceedingly promising one. The Maine Boress as yet made no in southern Monterey county, which Mr. E. G. as is the case in any oil district, but those that do yield pay their owners handsomely. A new petroleum field has been discovere

with the finest quality of petroleum, or green oil, Several well-known experts have visited the new field, and consider it of great promise. in the rock it is stated that petroleum exudes in quantities. Holes sunk from two to three feet in the shales soon fill, we are informed, sandstone abound, and wherever breaks occur district is on the line of the railroad survey from San Miguel to Bakersheld. Shakes and Parkfield, and south of and near the coal mine now being opened by the S. P. R. R. Co. The The district lies northerly from the town of what is called the Little Cholame Oil district. Raymond and associates immediately located

best cognizant of the requirements for oil, state in the State in which the mew district is located is most sast of the new district, at Buena Vista. he shades the district. Oil experts are confident that in the district. Oil experts are confident that in good quantities will be atrack at from 300 to 500 test. Boring Will be undertaken in the low, hills bordering Little Cholma sheady discoving the confidence of the mountains ide of the mountains and the case of the mountains at the confidence of the mountains at the confidence of the raw district, at furnity the confidence of the raw district, at furnity and the confidence of the raw district, at furnity and the confidence of the raw district, at furnity and the confidence of the raw district, at furnity and the confidence of the raw district of the raw district. A report on the prospect made by Frank Thayer is encouraging, and a company or com-ellew sine of congressing of econd a firm seinag

this plant. world, is laying plans to still further increase largest and most extensive smelting plant in the THE Anaconda Co., Montana, which has the

husetts Hill, Nevada county, is to be de-THE Ford & Reilly mining property on Mas-

that used by Mr. Urquhart. The dimensions on this cut are in millimeters. It consists of a that shown in section, on an enlarged scale in Fig. 2, which is copied from the drawing of Pennsylvania experiment is a modification of olearly in the engraving. The oil is fed into the five-box by means of a form of injector shown at A, in Fig. 1. The one meed in the the fire-box, with eides, S, and an arch, R, on top. The arrangement of the ash-pan is shown comotive. As shown in the engraving, a fire-briok wall, W, is built up at the front end of Railroad and Engineering Journal. Fig. 1 is box, and also re-ignites the oil after it has been a longitudinal section of the fire-box of the lo-

obanged, and oil is now again being used with a probability that it will continue. Very ac-ourate tests were made, the results of which however, the farmaces were again economy of the liquid fael. A few months to coal burners, though the records showed the The ferryboats of the Central Paoific E. R., Co., running on San Francisco bay, were for some time run with oil as fuel, and then, for some time run with oil as fuel, and then, for some unexplained reason, were again obsuged

Oil Fuel in Losomotives.

were published in this journal.

As to the use of oil finel in locomotives, the

conditions are different somewhat, and the central tube, T, to which etean is admitted by

enters the annular recess c c, and from it, through the holes of d d passes into the tube

Pennsylvania railroad in the use of liquid fuel T. Oil is supplied through the pipe A. When in locomotives, and the form of furnace they the tube T is withdrawn, by the mechanism have been using has been figured. By way of shown, it leaves an annular space around it at experiments have recently been made on the loui binpil to sau and ni baoulier sinavlyuned ments in that direction also. But a series of same company have been conducting experi- a pipe, shown by dotted lines at B.

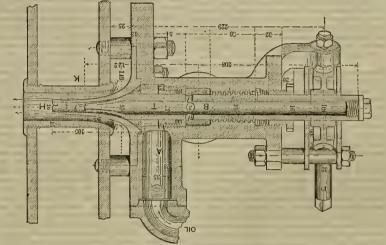


FIG. 2.-INJECTOR FOR FEEDING OIL FUEL TO LOCOMOTIVES.

current of steam and oil which escapes at H as an enting dinage and algoring of air through the opening serted into a hollow stay-bolt, K, in the back and of the fire-box. At g g there is an annular opening around the nozzle of the injector. The The nozzle H of the injector or burner is intion of the current of steam in T.

vided apray, which is mixed with the air that The oil is thus converted into a finely di-

which becomes heated to a very high tempera-It thus acts as a combustion chamber, bonnet, with its opening turned toward the inshape of the fire-brick structure is that of s particles of oil that are not consumed when they are first injected into the first-box. The The object of the fire-brick is to receive the

has been done, and careful experiments have been made with it since. ply the Urquhart system to a locomotive. This of the representative who was sent there, the Pennsylvania Esilroad Co. determined to aphart's system of burning oil. On the return was in Europe he received instructions to go to Russia and learn all he could of Mr. Urqufirst successful scheme of using petroleum as fuel—at least in locomotives. Last year while a representative of the Penneylasnis railroad excepting oil, and what there is is dear, where-as oil is plentiful and cheap, has developed the eastern Russia, where there is little other fuel tor some years been Locomotive Superintend-ent of the Grazi-Tasritzin railway in South-Urquhart, a Scotchman by birth, and who has explanation it should be said that Mr. Thomas | e c, through which the oil is drawn by the ac-

The plan, as applied here, is described in the

Progress Toward Universal Bi-Metalism.

in their financiering.

We are told that this inflow of gold is someway from the time this outery was made to the present. The very reverse of what was pries dieted has taken place, proving these gold bugs as to be as much at fault in their vaticinations as in their distinguishing. And yet everything has been working the other serious embarrassment to the Government. meroial interests and might even cause would have a damaging effect on our industrial to business generally by divining gold out of the conversion of the same in the same of the conversion of even this small amount of silver into oun Tuini serig esuse pue epert elqqiro esousou benistaiam yltuots seimene sti llid sidt gai Tuo egusreb bluow ti wal a otai beteane ti tadt \$2,000,000 per month for coinage? In oppos-Covernment to parchase silver at the rate of finally passed by Congress empowering the Bland silver bill, and even opposed the Act purpose it comes here, the fact of its coming is nadeniable. What becomes now of the predictions of those who so distorly denounced the or for permanent investment in this country. But through whatever channel or for whatever trade, being designed for speculative purposes she influx for several months past having been large and steady. Much of this gold appears to be coming here ontside the regular course of Nearly every steamer arriving at Atlantic porte brings more or less gold from Europe,

proceeds here for investment, edt won gnibnes ere seitirnoes esedt no bezilser ment bonds and that parties abroad having enexpected payment of municipal and Governor foreseen, being due to an extensive and evad ton bluce deidw bas Isasmoned gaidt

this gold from these mono-metallic countries,
where gold is considered the only fit metal for
where, silver being regarded as too base for Why all Strode Heard bread . evad silver if they have such a surplus of that metal Granted, why don't these parties send us

to effect each depression. There, as in this country, the bankers, the brokers and the credprice of silver has meantime been kept low, that has been due to large interests concerned come a matter of general complaint. If the to-day. There is socially a dearth of the white metal in that of ty-so much so that it has be-The fact is, there is no overplus of silver in those countries. The pretended glut is all a myth. There exists a searcity of silver in London.

ested to a double shave. United States, the American producers of these several commodities being by this process subwheat and cotton of India are purchased with this silver and shipped to European markets, there to compete with these staples from the India, and, having coined, pass it current at \$1.30 per cuncer, it being in that country the sole legal tender. At this advanced value, the buy our silver at 98 cents per ounce, send it to property, certain commercial classes in England working to the same end. The latter esto of benidmoe eval y listenes gesele roti oredit silver and deprive it of its legal-tender

function that properly pertains to it. This war upon silver is, comparatively speak-ing, a modern movement, Not until recently edt mrotreq ot bewolls ti erew revise at home. We have been as far from suffering a plethors of silver as the city of London. Here, as there is the city of London. Here, as there, silver coin has been rather scarce than otherwise. In small amounts our scarce than otherwise. In small amounts our people prefer it to gold. It here circulates freely, there being no more of it than is refused, and sometimes hardly enough. There would be neither in this country nor anywhere else in the world a surplus of silver were it allowed to perform the money allowed to perform the money silver were it allowed to perform the money silver. nico reate a redundancy of silver coin 000,000,000,42\$ seats to engage of these \$24,000,000, and is larger to a larger of lar

will be called in the early future, and that it and to proclaim in favor of adopting a bi-metallic currency the world over. That such a Congress temains only for a congress of the mations to element in the real sairth to escorpe for the for elements of the conference of the conferen peing then so little chance for ostracising silver, favor as gold, peoples of primitive times having given the cheaper metal the preference. There emas ent diw bebrager need aan ti dras ent to from the earliest times and among all nations has any restriction been placed on its coinage.

will adopt the policy here indicated, we enter-tain not a particle of doubt.

dterr up about October 15th. THE ROW Chollar mill on the Cometock will

How Plants Feed,

A plant will feed upon itself for a time, or rather, will feed upon what its prodecessor left as as a sort of inheritance for this very purpose as a sort of inheritance for the very purpose as a sort of inheritance for the very purpose as a sort of inheritance for the very purpose iliving the preceding season. So it is that when a seed is planted, as it is ealled, the when a seed is plant is therefore depend upon this for itself and must therefore depend upon this for itself and must therefore depend material to push it forward into visible itself and must therefore of the part of the state of the forest and rough itself and must there is the reserve accumulations of the parent stored materials are necessary to swaken the construction of moisture are necessary to swaken the construction of the fame of the temperature of sases above to grow the temperature is seen to of plant, such individual plant, and in fact of plant, such individual plant, and individual plant, and its famperature, reserve, as is the overy part of a plant, feeds and performs its life. Ower the famperature is such bird to overy part of a plant, feeds and performs its life of when the temperature is such its of the famperature is such its of the famperature is such plant, of the growth of plants, and the famperature are authored of aspect, site, a mergesture, the court in spite of the interiously may be discardingly no of the farmer, and yet to some extent, by oboice of aspect, site, and such ties, and other in season. Draw and the fame and in verying the court in spite of the interior or plants and in varying to or when the fame is the fame is in the fame of the fame would be subjected to. Water proof or the fame is the fame is the fame in the fame is the fame in the fame in the fame is the fame in the fame is the fame in the fame in the fame is the fame in the fame

plant by which it gains entrance,

Literation Developing to the London Electrician, the following interesting experiments
were described by Mit. Boys at a recent meeting of the Physical Boolety: ""I sealing wax
oup and put upon the conductor of an electrioup and put upon the conductor of an electrioup and put upon the conductor of an electrioup and put upon the conductor of an electriperiments, it will begin to throw out threads in
periments, it will begin to throw out threads in
then breaks into beads. These minds deschibed
an extendinary and the meeted wax about 6 beads
and machine beads are markeble speed,
and he made to patter against a drum-bead,
and meetine before the melted wax about 6 being
out onortaining the melted wax about 6 being
and make a noise upon it like falling rain. The
oth whill be covered with the mosted, or
cal machine before the latter is worked, or
of make a noise upon it like falling rain. The
both will be covered with the most foeteritop ontaining the melted wax about 6 being
and be flaments. Canade belant is the ordition.

Tubber tubing so treated sends out almost invisible
being the diane and conclines enter the candle;
the flame and conclines over the candle;
be flame and conclines over the captroxing
out such at turn back and you into the out from
made, and, as they preak into beads, then only from
minutes, miles of these stricky threads can be
minutes, miles of these stricky threads can be
minutes, miles of these stricky threads can be
made, and, as they break into beads, the mented
minutes, miles of these stricky threads can be
mede, and, as they break into beads, the minutes, and, as they break into beads, the mented
when a ready means of powdering such of
these substances as are not easily pulverized in
these substances as are not easily pulverized in
the search of the search of the series of the s

Ice Lenars,—The London correspondent of the Moniteur de la Photographie writes to that Loundon the unidate of the white writes to that he had in didde of the write which has just elapsed a student made a lens of ice, with which he lit the pipes of some of the selative of sers or the Serpentinent, he says, which was first performed in the polar regions by Dr. Scoresby, to the great astoniants of the saious, for they performed in the polar regions by Dr. Scoresby, to the great astoniants of the saious, for they could not understand why the ice did not treeze the beams of the sun. We may remark that the beams of the sun. We may remark that the beams of the sun. We may remark that the beams of the sun, would set fire, at the force of ice. His explanation was concentrated upon the powder by means of a lars of ice. His explanation was the lens of ice. His explanation was the concentrated upon the powder by meeted thereby, other waves it does not absorb, and these latter produce the heating effect at the these latter produce the heating effect at the water and its fordurally a question of the indicates of the concentrative motions of the molecules of the concentrative motions of the waves of light, when there is discond between the two, the disconditions of the waves of light, contain was an end in the produce the indicate so the correction of the waves of light, or the waves in the molecules of the said the when there is discond between the two, the disconditions of the waves of light, contain when there is discond between the two, the disconditions of the waves of light.

Coal in the Morthwest.—A member of the Geological Survey, engaged in investigating the coal deposit in the Saskatchewan region, states the coal supply in the Morthwest is absorbed in the Morthwest is absorbed in the Morthwest in the Jucial Morthw

SCIENTIFIC PROGRESS.

Тре Тртее Ротоез—Ррузіса, Vital and Рвусіс.

[NUMBER 7.]

[Written for the Press.]

flytrap (Dionsa muschpula) are three delicates finaments which stand out at right angles to the finaments which stand out at right angles to the surface of the leaf. Touch one of the inch the surface together.—Darwin, Schoges together and the leaf instantly close together. On each lobe of the bilobed leaf of Venus'

Zoospores,

A term given to the cell contents of certain water-weeds, which were set free and moved about with considerable velocity, and with about with considerable velocity, and with better set set of spontantes of spontantes, in his calaborate treatise on Infusoria, had declared the greater treatise on Infusoria, had declared the greater treatise on Infusoria, had declared the greater treatise on Infusoria, had declared as locomotive of what are now receptized as locomotive of what are now receptized as locomotive of what are shown in his work on Insective.

Darwin has shown in his work on Insective orone Plates they absorb complex compounds, and that these are of importance to their natition. Files and other small pieces of the Droservi, files and other small insects of the Droservi, and in the serveries of the Oroservi flowed the state of the set of the decision of the least of the set at the sections of the least small pieces of meat, at in the secretions of the least-glands, and absorbed.

The process of respiration, see known in all the process of respiration, see known in a plant is the short process.

a films by the generation of the factors, and a factor a farmed a farmed as a films of a

Glossary of Microbes.

I. Microbes Which appear as points are studied and the control of consents. Or of the control of

Origin of the Indicator.

The origin of the steam-engine indicator is not clearly upon record. That Watt knew of and raed it in a more or less completed form is cornaded it in a more or less completed form is problematical. In the following description of the instrument, from his own pen, for which we are indebted to the Boston Journal of Comrances, it will be seen that he does not directly claim it as an invention of his own. The instrument was, of course, designed for use upon strument was, of course, designed for use upon a congines in which the work was nearly all done as one helow the atmospheric pressure, and were congines in which the work was nearly all done at or below the atmospheric pressure, and were graduated by the use of the barometer, and were graduated by the use of the barometer, and were graduated by the use of the barometer, and were graduated by the use of the barometer graduated by the use of the barometer.

About the first suthentic allusion to the in-diotor which we have been able to find, says the Journal, is an appendix written by Mr. Watt to the article upon the steam-engine in Robinson's "Mechanical Philosophy," pub-lished in 1822, in which the indicator is referred to as follows:

Hards the extinct of the stranger of the stranger of the protocol of the protocol of the contents of the conte

Labor-Saving Machinery.

The introduction of labor-saving machinery, people of several production of labor-saving machinery, been, more or less, opposed by employes, nuclear the impression that in some way it was going the impression that in some way it was going to be diseatons that in some way it was going such ing their wages or depriving them of labor should be diseatons to the case, At a council of manu-saving said that the the case, At a council of manu-saving said that the the case, and that the production of cloth per nanufacture that the production in a period of some dy years the operatives had risen in the same time fully the natural result was reached by using the dy operative had to manufacturer in the same time fully the natural result was reached by save worked out by a thorongh statisticiar. And should be expected. For example, supple, supposing a fabrul that the one assing dispose of three times this production might be increased to and the such that the supply the open the same in the same times the supply the count of his product. If he was obliged to extent to supply the open that the supply t

connot define the entering of the greater produced time.

But if labor-saving machinery be introduced which wind will easile the old number of hands to produce three times the amount of goods, it is avident that after the onst of production will be another that after the onst of production will be another the street of goods, it is another of the cost of production will be but also for an increase in the wayer is opened not only for a reduction in the wayer of goods, operatives. The facts produced by Mr. Akkingon, in a recent paper published by Mr. Akkingon, of the relation that one is a similar expensed by the maching the problems, which are see easy of solution, not stop to work out in this own when the interesting in the jumps at the conclusion that the introduction of any may now device to save labor is good under the public of the min a hardship by depriving ing to work for him a hardship by depriving ing to work for him a hardship by depriving ing to work for him a lardship by depriving in the form of the magne of any apport,

MECHANIGAL PROGRESS,

Going Steamer. The Mechanism and Working of a Sea-

We give herewith an extract of a letter from the mechanical editor of the flower of a letter from the mechanical editor of the flower of the flower of the mechanical editor of a season of the mechanical editor of the season of the flower of the mechanical of the mechanical of a season of the mechanical of the mechanical of a season of the mechanical of the mechanical

men in applying the rudder in a verticial disrection as well as to keep her directly on her
rection as well as to keep her directly on her
it, a not so easy to handle an iron steamer as
a landsman might expect. It takes miles to
bring them to a standstill when once at the
highest peed of undrion in spite of the reverseing power of the engine. Three miles is not a
title propeller is revolving in a no popelate direct
ton, and to put the helm hard-a-port would
the propeller is revolving in a no popelate direct
to a propeller is revolving in a no popelate direct
to any a hard of the select
as the propeller is revolving in a no
as observed on the case of the steam-gear
to a propelate and select of the steam-gear
to a proben rudder whenever the steam-gear
to a broken rudder whenever the steam-gear
dozen desp noted is light seen shout the steam indeling
the teache and sells on to each extremity. A
dozen desp noted is like to see the steam-gear
dozen despender, but we tail to see the steam
the sand despender of the seen shout the stern when a
dozen whirtpool is seen shout the stern when a
ment where the latitude and high seen where a
ment where the latitude and the ship seen the
not the vessel. Sailors, outside on the a step
the dozen
the an opposite the seen shout the curves
of the computed, have strange ideas in regend to distain the sen of the stand of sight to like
the computed, have strange ideas in regend to distain the ser of the searth curves about
teet but intitle more than five miles can be seen
down the surface of the cean without going
on the surface of the cean without going
the surface of the cean without going
on the surface when the surface of the cean
on the surface of the cean without going
the surface of the cean without going
sight inches to the miles with the surface of the cean
on the surface of the cean without going
the county of the cean without going so the surface of the cean without soing
the surface of the cean without going
the county of the cean and the surface of the cean cean wi

OLEAN BELTS ON THE PULLYSS.—Olean and oil leather belts without taking them off oil leather belts without they will shrink. Then a piece must be put into them and removed again after the belt has run a few days.

Use Good Lubricative On.——look well to the bearings of your shafting, engines and manodines. Sometimes 25, 30, 40 and even 50 per cent of your power is consumed through lack of your power is consumed through lack of look of it.

oritical disease are bad; they have a direct ef-feet upon the physical powers, the heart's ac-tion is impaired, the digestion becomes affected, and there is a ward of tone very much opposed to restorative efforts. It is a wise plan to take as little notice of these forebodings as possible, as little notice of these forebodings as possible, but to ridicule them is bad.

How To KEEF COOL.—A Mebraska correspondent them is bad, appendent fells the New York World Mow to keep cool. When the thermometer truns up to keep cool. When the thermometer truns up to the inexties or one handred, and people feel as the intext of the treatment of the properties of a teaspoonful of milk or sweetened water and drink it, they will find they can stend the heat ever so much better. This raises the interted water of the feel of the treatment of the experience of the external heat over the internal and the action of the external heat over the internal and the treatment of the external heat over the internal one of the external heat over the internal and the action of drinks one swallows, the more weaker one of drinks one swallows, the more weaker one of drinks one swallows, the more weaker one be used very cautiously and in small ness and lessitude. Cold drink in bot weather ones and lessitude. Only drinks in sumilate the more weaker only for transient relief, but pepper holds its only for transient relief, but pepper holds its own and does not cause thirst attentation.

TREATMENT OF LUSEOT STINGS.—The stings of insects, such as graft, mosquitoes, etc., says Los Stonds and as graft, mosquitoes, etc., says Le Phornacien Populaire, are often painful.

In such a case apply spirits of hartshorn or volstile alkali to the part, Spider bites are not stile alkali to the part, Spider bites are not only painful, but often venomone, and it is necessary to weak the sting of the best bermulu only vinegar. The sting of the best bermulu only vinegar. The sting to be done is to press the blood that flow will carry along a portion of the poison. Then suck the wound a move the first thing to be done is to press the blood that flow will carry along a portion of the poison. Then suck the wound and wash it knowled in order to make it bleed, since the blood that with water and then wound and wash it flow giand, consists of three parts of onlicin of ilms to eight of common sailt, an onnee of this powder is to be dissolved in a tumbler of the sping of the ecorpion, volatific alkali should be need, so eight of the sting and after the pain subsides, an emollient catand a flee the pain subsides, an emollient catand a fitter the pain subsides, an emollient catand a flee the pain subsides, an emollient catand a flee the pain subsides, an emollient catand and pain subsides, and emollient catand a flee the pain subsides, and emollient catand and wash.—In subsider, and subsides, and ened, the pressure of the corpion of the pain subsides.—In appearance, the best-

ETECTS OF BEER.—In appearance, the beerreality he is most incapple of realth, but in
reality he is most incapple of realsting disease,
A slight injury, a severe oold or shook to the
body or mind will commonly provoke acute
disease, ending fatally. Compared with inbody or mind will commonly provoke acute
disease, ending fatally. Compared with inbody or mind will commonly provoke acute
disease, ending fatally. Compared with inboratics who use different kinds of alcohol, he
system no reouperston, but steadily lowers the
system no reouperston, but steadily lowers the
system to reouperston, but steadily lowers the
system to reouperston, but steadily lowers the
drinking in this country produces the very lowviral forces. It is onr observation that beer
drinking in this country produces the very lowdrinking in this country produces the very lowset form of inebricty, closely allied to criminal
in our large cities are beer-drinkers. It is asserted by competent authority that the very lowberedity are more positive in this class than
from orber alcohols. Public sentiment and
legislation should comprehend that all forms of
legislation should comprehend that all forms of
alcohol are dangerous when used.—Scientific

Meunican.

Mennica Severed Finoers.—Numerous inspance of lefe in the stances have been recorded of lefe in the medical journels of the complete reunion of free sur the kends of of the and in the part, in some eases a man, in out time, the fact, in some eases the kends out of the time, the had gone time kind in the sam. In one case a man, in out of the sam, in out of the time, the had gone from the place and of his time, the had gone picked up the end, wiped it and replaced it, in its original place as mearly at picked up the end, wiped it and the finestly as some 20 triens lates and the finestly is now as good as ever, save that its sensibility is now as good as ever, save that its sensibility is somewhat diminished. In another case a boy chopped off the ends of three fingers. He was somewhat diminished. In another case a boy chopped off the dends of three fingers had been for and were brought to him. Fur sectioned them, and were brought to him. He attached them, and two of the three united.

He attached them, and two of the three united.

greatest living authorities upon buccal bacteriology, Dr. Miller, finds that by using the following mixture be could completely efective for lowing mixture be could completely efective for mouth, everyties in carious teeth, etc.; Thymolyfour, 34 fluid drachms; water, 25 fluid encalyptus, 34 fluid drachms; water, 25 fluid the mixture, especially before going to bedthis mixture, especially before going to bedfulled in a mixture of water and spirities is respectively of the mixture of water and spirities is respectively by the spirities of the spi

the garments before wetking them, Squeeze the garments before wetking them, Squeeze the garments before wetking them of Saments on the same plenty of warm water, and dry quickly. It they are moothed with an iron, let it be done on the wrong side, "Helen Dorcas" gives the following dide, "Helen Dorcas" gives the following die, "Wellen Dorcas" gives the following die, "Wellen Dorcas" gives the following did not pails of soft water in the holler and add one-half cake of common scap, or three caps of one-half cake of common scap, or three caps of soft scap, and three caplespoonfuls of kerosene; and put in the dirty olothes, boil 20 min. It is not seen and in the distribution one water, riese and hang out,"

hang outes, sake out and rub in one water, rines and hang out."

UTILIZING LEATHER, WASTE,—The sorape cent solution of sulphuric soid. The immersion solution of sulphuric soid. The immersion solution of sulphuric soid. The immersion should continue until the shavings are plastic, and the mess, after thorough washing with water, may be molded with comparatively with water, may be molded with comparatively understhing the maxed with come material like cacutchoue, it will not resist moleture. It was the sourchouse, the cacaptain as a properties of states the cacaptain as a properties of states in a successful as in the subjected to a suitable machiney into a species of leather-wool, formed in mesta molds, dried and subjected to a comparative the states in the normal subjected to a state and the material and source of the form 6000 to 10,000 pounds of the form of the form of one one to be subjected to a the presence of the form of the square into, Articles made in this way water poor. The presence of the form of th

GLASS COACHES, or cosches with panels in-stead of curtains at the sides, do not appear to have been introduced in England until the mid-dle of the 17th century. Plate glass for the purpose was of Venetian origin.

### GOOD MEALTH,

TOT POISON OAK.—The Popular Science Vesse gives the following remedy. I have allowing remedy. I have allowing remedy. I have allowing street amoyance, unless and oak as to give me great amoyance, unless to give me great amoyance, unless and oak as to give me great amoyance, unless for me, if properly applied, I make the application by saturating a slice of loaf bread with applied, I make the soda accomplishes to me, if properly applied, I make the soda accomplishes application by saturating a slice of loaf bread with application of the empirical parties of the application of the street of the application of the empire of the solar and discolve the empire of the solar process, and discolve the bread being a vehicle through whose to be be dead such and the pread being the solar resolve the humor. I find that the washing to abstince the bread resolve with me, we moisture the bread resolve and moisture the solar resolve the bread water, My skin requires the heads resolve with me, bread moisture the breads resolve with me, that the washing to absting our bread in requires the poiston. I ravely have med to retain this soda poultice for more shan 30 minutes the pread all over my body. Now 30 minutes the pread all over my body. Now 30 minutes the pread all over my body. Now 30 minutes the measure the direction of its existence, would appread all over my body. Now 30 minutes measure the duration of its existence,

Healthue Diseases by the state of the scale of the scale

## USEFUL INFORMATION.

### Paper-Making.

To properly mix fibers we mast know the qualities which they have they are they are

and ground are not stated and ground and contents of and ground and a forest and a foot and a forest and a foot a foot

It is really wonderful to notice the constant one which your industrial interests are

andergoing from year to year. Too little atten-tion is paid to these changes by the average business man. Those who watch and study them often realize large benefits from such

the same may be accepted and the service are such a control of the such a control of the

MINING IN BERTISH GUIANA.—Gold mining in British Guians is the subject of an interesting report received at the State Department from Consul Bunker at Demerara, "The mining done here at present," writes Mr. Bunker at Demerara, "The mining done here at present," possessing a bandsome profit, No veins of anticrons quartz bave as yet been found, though there is little doubt of the existence of such lodes. Specimens of the richest quartz are often found in placer washings. The principal mines lie northeast of the Essequibo river, along the mortheast of the Essequibo river, the collection of ranges on which the celebrated the Cirete Interest of the richest reconsults of ranges on which the celebrates of the Department of ranges or which the celebrates of Cirete are sufficiently a consult of the collection of the offer and the first of the collection o

TREATING WOODS ARTIFICALLY.—Tine naturally treated is one thing; painted in brown or red and called black walnut, mahogany, or foerry, it is decidedly another. So in hard woods; to show the natural color and to bring out the beautiful grain of the wood is far preferable to any treatment which aims at different able to any treatment which aims at different

THE BANNER MINE.—Transcript, Sept. 22: less were sent to the Samoer mine were sent to the Selby level of the Banner mine were sent to the Selby Smelling Works, San Francisco, for assay. The Transisco, for assay, The Transisco, for assay, The Transcript selected as selected selected selected selected for the Selby received yesterday selectified selectified and the Transcript in the Sept. See and \$370.58 in gold to the too. In order to get a still better test, seven toors of the same character of rock is being sacked to the too. In order to get a still being sacked in the same character of took is being sacked and will be built on the selby works in medalitely. The rock failing to pay by mill process, which was according to the cost of teducing ores, while the selection of the question. The rock paid \$8 s ton when the rest of rock which are succeived thom the seven tons of rock which are now being shipped should not as the mine shin down. The rock paid \$8 s ton when the rock was taken from the same level and thom to so took which are no good from the same level and thom in the order of soult two miles, and from the first too the mine of the Warracker of working the first form the mine to the Warracker of working the order of about two miles, and from the cost of soult working the order of shoult one. The complete is the cost of working the ore, including transportation, its 2sz per ton.

#### Mevada.

Inyo.

Inyo.

DARWIN.—Inyo Independent, Sept. 24: The Thinsietts mine is otherwished and a sood deal of fine for over. The mine is obving well as a for possible of the fine is obving well as a for possible of the fine is obving well as a for possible of the fine is obving well as a home and is shipped to San Francisco. From Lookout reports are of the same Prancisco. From Lookout reports are of the same points of the form ond-grade one is kept for home safelting. Mr. Fitsching got out, nearly all of which is of each plain of the same ond-grade one is kept for home safelting. Mr. Fitsching got out, nearly all of which is of one is second-grade one is the first of the first in the first of the first is the following of the first of the fin

PROSPECTING.—Placetrylle Observer, Sept. 22: Extensive prospecting: among our mines in every loss free county is being carried on, and we hear flattering reports from every district. It will not be very long before old £! Dorado will take her old blace in the front rank as a mining county.

#### KI DOTAGO.

Murphyse.—Cor. Angels Keroyd, Sept. 20: The Cop Hats is raising to the surface ore of good quality, and good progress is made with the Burleigh. When weter is again turned into the Union Water When weter is again turned into the Union Water Co.'s ditch a good account will be given of the Justine pulverizer. Bary, T., 2 and J. E. Matteson, is opening up to a valuable property. The lode is is opening up to a valuable property. The lode is of good width and of excellent quality. It has every ver mine is now worked by the tast in a second with success. The five-evidence of staying qualities. The Camili & Driverizer mine is now worked with success. The five-very mine up to it summore to spacify. The mines in this vionity are in a bealthier condition than known for years, and it is mining quality. The mines in this vionity are in a bealthier condition than known for years, and the internal to the violity are in a bealthier condition than known for years, seekerlence, wealth and of mining property inst few seen among us, picking up mining property inst few know anything about.

El Doredo.

### Calaveras.

IRENTIOWN.—Dispatch, Sept. 24: "A rich discovery of quartz was developed this week in the Reid & Askey mine, in the Lishtown district. This mine has been paying handsomely for several months. It is worked through a tunnel. A five-stamp mill, it is worked through a tunnel. A five-stamp mill, it is worked through a tunnel. A five-stamp mill, it is worked through a tunnel. A five-stamp mill, and by water, does the crushing. The Irishtown district is showing up some promising mines.

MIDDLE BAR TUNNEL.—Ledger, Sept. 24: The work of sinking the winze in the big tunnel at Middle and of sinking the winze in the big tunnel at Middle scaled by 1 is making slow progress. This winze has the deeper by heard windless.

MISCELLANEOUS.—Charles Peters go but literated and they can go but literated and they shown Company and Better Hope flown Company and Better Hope flown Company and Better Hope durated here, shown Company and Better Hope grants along the Soloyope past shows immense bropher and the Soloyope past shows immense bropher and the Soloyope past shows immense proportions, and even if it in Hunt's guleh to J. A. Ferson for \$20,000. Grant in the Hope flown of the Barby and cheaply to grant shows immense proportions, and even if it is Hunt's guleh to J. A. Ferson for \$20,000. The Indian flow of the indequal supply of water and obselved in the Hope flows of the Soloyope and the Alpine, are shout to solo of the indequate supply of water. The Empire mine and mill at Ply. Solo tone of ore. The Empire mine and mill at Ply. Solo tone of ore. The Empire mine and mill at Ply. Solo tone of ore. The Empire mine and mill at Ply. Solo tone of ore. The Empire mine and mill at Ply. Solo tone of the indequate supply of water. The Empire mine and mill at Ply week, and the worked the Alpine, are shour to sink a new starting of purchase the Ingested as solo or in dividends. The engine and the Hereules mine on Diy creek are proper as a soloye to solo or in the solo or the solo or the solo of purchase the tope moved to the Cosmopolitien mine near by, where steam horists are in process of trees. The Empire mount of the Solo or th

The following is mostly condensed from journals published in the intexior, in proximity to the mines mentioned.

#### OALIFORNIA.

IIIING SUMMARY.

those days the cost of milling or seven for the question of the december the mines of reducing ores by the force state of reducing ores by the force state of reducing ores by the force state of rock white the december that the case of rock white the control of the december that the case of rock which are received from the first lot—as the rock was taken from the sme level and there is no good research to make a pleasant of the first of the december that the case of working he believely to San Francisco. The engage is people of the first of the control of the first of the

BIGILS.

Moral Moral Marsa.

MCCALL GULCH.—Courier, Sept. 24: McCall Gulch on Dog Creek, a tributary of the Sacramento below Delta, has been famous for the great amount of gold staken from the bed and bars. McCall took out as amall fortune himself, some of the nuggets of gold staken from the belief of old miners that there was weighing two and three bundred dollars. It bas always been the belief of old miners that there was gulch, and that the gold dound had it seems one or more inmensely rich quartz ledges on the quartz was done there in years past, but without therein, consequently considerable prospecting for quartz was done there in years past, but without and a fame and that the couried and the the couried was James Bard. When the rebellion broke out he about worked out, but kept the quartz theory in mind. We are now informed that some weeks ago about worked out, but kept the quartz theory in mind. We are now informed that some weeks ago mind. We are now informed that some weeks ago went facting the found the located a large ledge on McCall Gulch which prospects immense, and it is althought that he found what had been long sought for.

BISBUS

Ban Diego.

Ready Relief mill has started up on soo tons of receiver. The Ready Bros. see putting up as whim on the Anteceiver from mine is sinking a new shalf. Fredericks of the Cincinnati mine is sinking a new shalf.

BOGRAES for the Paralla, Sept. 24; The old Rock Rockek mine has been bonded by E. K. Dodge. The Creek mine has been bonded by E. K. Dodge. The layed pumping until a new rod is received. Work will then be resumed. The principal reason why our questre mines have not yeided more is because the owners have not gone deep enough. The ledges of owners have not gone deep enough. The ledges of this county will yield as much as those at Grass Valley when they are worked at the same level.

pect in the same direction.

PIRGOR.

MORNING STAR MINE.—Grass Valley Union, Sept. 24: The reports from the Morning Star graved mine, near lowa Hill, continue to be of the most favorable character. The gravel is very rich, and recording to the pan from gravel is very rich, to the pan from gravel which has heretolore been to the pan from gravel which has heretolore been to the pan from gravel which has heretolore been the gravel four feet above bedrock. The work of the gravel four feet above bedrock. The work of the company is famplered at present on account of the company is famplered at present on account of the company is famplered at present on account of the company is famplered at precent on account of the company is famplered at precent on account of the company is famplered at precent on account of the company of the considered gravel is crubed, and the principal at the control of the company of the control of the company of the c

financially too weak.

\*\*EIGH CHAVEL.\*\*—For some months past John Chancially and Bonker Hill, a short distance from Crass ground on Bunker Hill, a short distance from Crass Yalley and Rough and Ready township. The ground belongs to the Alta California Gravel Mining Gund belongs to the Alta California Gravel Mining Cunningham and party have leased that portion of the ground they are now working. Funding power, and John power, and the ground, run by watter the ground they are now working. Funding machinery are on the ground, run by watter work, but they have lust arruck a rich bed of blue power, and for an arruck a rich bed of blue famors amentating they have found the famors and they have found the famors on of lead. The gravel yields handsomely, they have the standsomely, ourselves the standsomely.

The ground sold lead in the latting a permanent strike, The couragement of being a permanent strike, The couragement of heing a permanent strike, The couragement of heing a permanent strike. The peet in the same direction. t in the same direction.

PORTUNA MINE,—Grass Valley Union, Sept. 22: Ex-Congressman Page is coming out from Washington City to reopen the Fortuna mine, which is on the old road between the Town Talk and Mevada opened up, but when last worked the company was premed by the Washington Washington Washington City.—There is a probability of a good mine being opened up, but when last worked the company was Mich Gray Ver.—For some months past John Rich Gray Ver.—For some months past John

nly. Parties are now getting out the timbers for so construction of ten additional stamps to the y the middle of Movember x8 stamps will be rung and the sulphuret works ing and the sulphuret works will be nearly compered.

deeper.

CON. CALIFORNIA AND VIRGINIA.—The work is grown as the old Summit mine, and has stad has staden our being on vigorously in every part of the mine, and a quantity of high-grade sulphuret ore. All the bone grounding the same amount of ore. Three prostets grides are being added to the battery well and has a good prospect shead.

Best AND BELCHER,—On the 1300 are upraising at the boundary of the Consolidated California and at the boundary of the Consolidated California and a second to the Consolidated California and a second to the Consolidated California and a drifts in both mines on the 1300 level.

Occidental Andreas are being with the wince of control of the consolidated with the wince of the connecting with the connecting with the wince of the connecting with the wince the connecting with the wince the connecting with the wince of the c

HAVWOOD.—The report from this mine is that it were looked better than at present. They are rung the tunnel further in and sinking the winze these transferer.

CROWN POINT.—During the week a westerly drift was started on the 400 level and run 6s feet. The face is a mixture of clay and quarts.

CHOLLAR.—On the 1300 level east crossouts Mos. 4, 5 and 6 are still being advanced loward the vein. As and 6 are still being advanced loward the vein. 4, 5 and 6 are still being advanced loward the vein. As and 6 are still being advanced loward the vein. As and 6 are the Sharon abaft the northeast drift has developed a body of good-milling ore. ALTA.—Are upraising in the Reystone vein on the 75 level, in fair one. The mill is getting slong the 1150 level, in fair one. The mill is getting along slowly, owing to the castroity of earpenters.

BULLION.—Have started a new drift from the main east drift on the 350 level, and have advanced it so feet. The usual progress was made in the main east drift, which is now yoo feet from the shaft.

ALPHA.—The east drift from the south drift 60 feet south of the shaft on the zoo level now shows as feet of quartz carrying considerable metal. Mexit to open a new level.

CROWN POINT.—During the week a westerly copen and any level.

Washoe District.

SAVAGE,—Virginia Enterprise, Sept. 24: On the 500 level No. 2 east crossout has been advanced the 500 level No. 2 east crossout has been advanced on the 600 level least crossout No. 2 has been extended 23 feet. This drift shows fair-grade ore. Its facet is in vein porphyry. On the 900 level the west faire from the shaft reached the ore body last These drift from the shaft reached the ore body last These ore that averages \$40 per ton, and the face continues in ore of this duality.

HALE AND NORCROSS.—On the 1030 level east crossout No. 3 was advanced 30 leet. Its face is in com of the winze at the 1350 level has been extended 30 leet. The face of this drift hom the bothom of the winze at the 1350 level has been extended 30 leet. The face of this drift was yesterday entering quarts, which gives low assays.

BULLION.—Have started a new drift from the was perfectly entering quarts, which gives low assays.

MEAVDY'

SHAWMUT.—Union Democrat, Sept. 24: The SHAWMUT.—Union Democrat, Sept. 24: The owners of the Shawmut mine, in this county, have expended, probably, \$10,000 in a vain attempt to tap were made, probably, \$10,000 in a vain attempt to tap but the right one, and all to no purpose. About a month ago J. MoTanahan entered into a contract with Maurice Dore of San Francisco, by which month ago J. MoTanahan entered into a contract with Maurice Dore of San Francisco, by which and the right one, and appears a tract of the first drill, Mac and his son Carroll drove a drill through into the bottom of the son-foot shaft, and spent a few invelopment of the son-foot shaft, and spent a few invelopment of the son-foot shaft, and spent a few invelopment of the son-foot shaft, and spent a few invelopment of the son-foot shaft, and spent a few invelopment of the son-foot shaft, and spent a few invelopment of the son-foot shaft, and spent a few invelopment of the son-foot shaft, and a danger.

oumnion.r.

HAY FORK ITEMS,—Chas. Maynard of Hay Fork informs us that this being estimated at nich rock in the Magdaline, it being estimated at several hundred dollars to the ton.

EAST FORK.—Yournal, Sept. as; F. I. Perkins, who has been at East Fork recently taking a look at the mining property of W. T. Coleman in that district, left for S. F. Tucsday. He was very much pleased with the outlook of the mines there, and experience in their future. pleased a great dead of confidence in their future. He is of the opinion that the amount of ore in sight in the locations of the company would justify a mill, as at the last cutabing the ansatra paid first and there is now too late to do much in the way of erecting a mill this fall, but well-informed people creding a mill this fall, but well-informed people retring a mill this fall, but well-informed people freing as mill this fall, but sellin the way of this poperting a mill this fall, but well-informed people freing a mill this fall, but selling to operations on this properting a mill this fall, but selling to obtained in East Francisco parties are getting a footbold in East francisco parties are getting a footbold in East and other sam has passed.

The Bouknar Sour,—It is reported that Frick another year has passed.

The Bouknar Sour,—It is reported that Frick for the same the standard before the camp will take a mighty stude forward before

Trinity.

man, S. K. Stephenson, Jos. Hutchinson,

NEW COMPANY.—Articles of incorporation of the
Sacred Mount Consolidated Gold Mining Co. were
filed this week in the county clerk's office. The
stockholders are L. T. Mooney, J. W. Mooney, R.
Sharkey, Sam'l Langton, Bert Sohlesinger and Len
Thompson. The mine is situated immediately back
of town near the busch ravine. Competent mining
for upon the structure of the mine is and also numerpany has two tunnels on the mine, and also numerpany has two tunnels on the mine, and also numershould not be successful the continued
about 100 teet shows an excellent ledge of goldbearing sulphurets and free-milling ore, Arrangeabout more the mine and the maney
the made so that work can be continued
through the winter months.

ten-stamp mill is under course of construction there. The latter parties have had ten men at work for a couple of which is 230 feet below surface. For a distance of about 450 feet in this tunnel is in well with a prospects. A much greater throughout yields big prospects. A much greater through on the other index of the ridge a tunnel can be obtained on the lode by running a tunnel from the pobtained on the lode by running a surface. The owners are L. T. Mooney, E. Freensen, S. R. Stephenson, Jos. Hutchinson, S. R. Stephenson, Jos. Hutchinson, Wew Component of the latter of the ridge at tunnel can be supplied to the ridge of the configuration of the latter of the

Eureka District.

SILVER CONNOR.—Burcets Sentinel, Sept. 21:
Supt. Beebee informs us that the Silver Connor mine
is looking exceptionally well. An important devella flooking acceptionally well. An important develInforment has lately been made on the 300 level.
They have 15 feet of clean ore of fair grade.

2dd Artizona

SCHELLBOURUE.—Cor. Reno Journal, Sept. 21:
At the old Schell Creek mining district, the veteran
At the old Schell Creek mining district, the veteran
known as the old Schell dammit mine, and has taken out
a quantity of high-grade sulphuret ore. All the
friends of Pete will be glad to hear that he is doing
well and has a good prospect afhead.

Spruggenont Diffathore.

Schell Oreek District.

THE SUMMES.—COT, Silvey State, Sept. 20: F. M. Howell has purchased the entire interest in the above-named location, situated in Sacramento dispose-oramed location, situated in Sacramento dispose-named location, situated in Sacramento dispose-oramed location, situated in Sacramento dispose and will eventually be the buggest benatza stound and leventually be the buggest benatza stound treated last winter from the lead at the bottom of the profile as the bottom of the profile one so so feet from the surface. Mr. Howell intends putting an a force of ment this winter, or as soon stehe fall roundup is over.

Ben Jacinto District.

J. H. L. Tuck has purchased a two-thirds interest in the Wevada mine, situated in San Jacinto mining the Nevada mine, situated in San Jacinto mining district, from H. J. Berdett. The mine is now producing some very fine galena ore. He has two men ducing some very fine galena ore. He has two men situation with the strength and will increase the force shortly.

Scholl Oreek District.

Sacramento District.

SHIPPING ORE.—Cor. Reno Journal, Sept. 21:
At Robinson district, near Ely, Harry Featherstone
At Robinson district, near Ely, Harry Featherstone
overered about a year ago. He is working the mine
for what there is in it, and is not dressing it up for
and the second-class is worked at the Monitor mill
in Taylor, all of which pays handsomely. Harry is
making preparations to stay with the country, and
is fixing up a home for that purpose.

Sactamento Dietrict.

KODINSON DISCRICE.

Palmetto Dietrict.

Work,—Esmeraida, Vezus, Sept., 24: Work is being pushed at Palmetto and developments are being made that leave no doubt as to what can be expected from there.

Robinson Dietrict.

ps tons.

The Pamilto.—Walker Lake Bulletin, Sept. 21:

The work on the Pamilton has resulted in some expeciency of the Pamilton has resulted in some exceedingly favorable indications and there will probably be developed a permanent mine. In the meanage the rich rock has again made its appearance and there will soon be enough for a crushing.

The Gold Bar,—There is rock in the Gold marrow, as most experienced prospectors express it. Specimens most experienced prospectors express it. Specimens with Thibino has are well filled with gold. This will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself if it keeps its will rapidly make a name for itself it it keeps its will rapidly make a name for itself it it keeps its will rapidly make a name for itself it its keeps its will rapidly make a name for itself it its will not name for the name for the name for na

ORE SHIPMENTS,—During the past week ore shipments were made from the mines of the disconstruct to the Kichmond Works—Silver Lick mine, 8 tons; Wender Pers, 199 tons; Jackson, 30 tons; Ramburg, 39 tons; Jackson, 30 tons; Bureka Con.—Dunderberg, 22 tons; Gen. Lee, 8 tons; Idaho, 17 tons; Members, 17 tons; Leonie, 29 tons.

add Auxona door Dee.—Prescott Courter, Sept. so: Mr. Johns, foreman for Mr. Bullock, tells us that his infiniter sate working in good ore on the Griffin mines near Prescott, and that ore is concatauly coming to Prescott from Moore & Doggett's rich mine. Miners the prayer for a reduction of nailmost asies, so that they may be enabled to ship ore of less value than too rts carloads of ore will be shipped each day and this section will be very prosperous.

OEST.—Fifteen men are employed. The ore is worked at the Briggs mill. Porosi.—Are crosscutting on the 350 and 400 els in very/promising ground,

UTAH,—Are running north lateral drift near the stood wein material of no particular value, so, has one aft no sufficiency size—leoroq

GOULD RAD CURRY.—Are apraising on the 500, 700 and 800 levels. There were no special developments maked during the week.

SIERRA MEVADA.—Are running a south lateral drift on the 520 level. Four men working on a shift made 91 feet of the drift, timbered it and laid the track.

LADY WASHINGTON.—The work of repairing the drift on the 73s level will be resumed in the face as the drift. district,

LECRUITS.—The shaft is down go feet, and a chift of 50 feet has been run north, revealing as rich a body of ore as has yet been found in Davi's Gate district.

EXCHEQUER.—Are running a west drift 886 feet north of the Alpha shaft, which is now in a mass of quartz and porphyty carrying assays of from \$2 to \$10.

ANDES.—Twenty-five feet of drift have been repaired on the 350 level, the last week, and that work is pretty near through. Are drifting east on the 3c0 level, in a promising quarts formation.

Scorpton,—The east drift on the 3c0 level has been advanced is feet. Its length east from the been advanced is feet. Its length east from the band is now 743 feet.

SECREGATED BELCHER.—Are now engaged in cleaning out a cave found north of the Overman wince, which prevents a circulation of air.

BALTIMORE, -- Are raising water with the tank, and have been the past week, Are putting in and re-

soo, and are driving north from it to connect with

4881 '1 TOO!

NOTES.—Prescont Courter, Sept. 86; I, A. Park is of opinion that Reference of Carle Maylower mine, Castle Creek district, has a great many admirers. Talk is the topper mines for Santa Maria district were in town Saturday stati. The Copper mines for Santa Maria district were in town Saturday stati. The The Walker district were in town Saturday stati. Santa Maria district were in the Saturday stati. The The The Saturday stati. The The The Saturday stati. The Tip Top mill; stop, as the mill on Lynx creek, so the Mariners of Saturday stati. The Tip Top mill; stop, as the mill on Lynx creek, year Mane's mill; stop, as the mill on Lynx creek, Mariners and Saturday stati. The Tip Top mill is tunning, so is that of Clark & Mariners and statistic, which is, seconding to response to the Saturday statistic costs of the Mariners and such on the Wonderful claim just show the Mariners and success last week by bringing and sending in the statistic of this camp. If Chitton experiences in the world. Those who to the typh of water welter to the farm was breaten in the owners are underway, who has seven to set gold out of it, proved the statistic of this camp. If Chitton experiences a recommend to the statistic state busy at work sorting one one Copper Co. were blown in last Thursacs of the Articles of precious dust and angever of the Articles of precious dust and dust and discoveries.

Anderwa, and the owners are benefit and state of the Articles of business it will be of a necessal with an angele supply of water with an angele supply of the Articles of the Articles

FURNACE,—Eureka Sentinel, Sept. 21: W. E. Griffin, agent for Wells, Fargo & Co., returned yesteds y from Union, which he appears to think will make a live camp, "He says that the furnace is as good a model as he has ever seen, and that it is running as smoothly as could be wished.

PROGRESSING.—Eureka Sentinel, Sept. 80: C. Waltage and Hiram Johnson returned from C. Waltage and Hiram Johnson returned from C. Waltage and Hiram Johnson returned from the rew camp. The matters progressing nicely in the new camp. The company paid furnace, is running smoothly and turning out its regular quote of to Shat daily. The company paid off on the 13th. In the lower workings of the mines a much higher grade of ore is being obtained. The gentlemen named have no doubt of the complete success of the Star company and Union district success of the Star company and Union district The Company of the Star company and Union district The Star Company and Union district The Star Company and Union district The Star Company of the Star Company and Union district The Star Company of the Star Company and Union district The Star Company of the

Union District.

TREASTORY OF THE TREASTORY AND THE SECOND TREASTORY.

A BOOMING CAME,—VIRTURE EMPLY, EACH THE TREASTORY AS A BOOMING CAME,—VIRTURE EMPLY, SEPL.

A BEAL. "I Juscarors is the liveliest camp in Eastern New Teach of Control of Cont

Bilver Peak District.

Mill.—Esmeraids New, Sept. 24: John Chiatovich keeps his ten-stamp mill at Silver Peak going
yet hours each day without stopping, except when it
becomes necessary to clean up. Taken altogether
the outlook is very encouraging.

ning principally on the poorest ore the company has Li is not only low greace, but mixed with clay and other bases substances, the result of a cave in the mixed state of the turnace shall down in June promisecusally, after the durnace shall down in June hood of five tone per day of bullion. The camp was and some fulle consequence is that there are trun free turnace, and what the uniners were berey and one fulle capable the mixed of the shall be subject in the turnace. The consequence is that there are sund some fulle consequence is that there are for the fuller working eight energy and no miners on hand to go to work ing eight-hour tran free turnace, and no doubt will be made, whenever the furnace, and no doubt will be made, whenever the furnace, and no doubt will be made, whenever the furnace, and no doubt will be made, whenever the formace, and no doubt will be tappined with one for one of or or exposed, but there are no men here to extract it at present. Of coal and wood, there is to an abundance on hand tor immediate use, and is an abundance on hand tor immediate use, and is inclose proximity to the camp. e proximity to the camp.

discovery, directories, conturns his discovery, directories, conturns the property will prove to be one of the big mines of the United States.

CGCUR PALENE,—Record, Sept. aq: There has been considerable scatteners in flown to-day over the report of a tiple glens arised states.

OGCUR PALENE,—Record, Sept. aq: There has been considerable scatteners in flown to-day over the report of a tiple glens arised states.

Order of a tiple glens arise and savenace are interested with him. Pirtobard and Prospect creeks. W. H. Chambers, Mall Savenace are interested with him. Mel Catedon was here cheef paleng being board and propagation of the forman mine. An ample of the scale of the strike, which is should not not be decided with the machinery for the decime which is should not one already to been set to work on the considerable amount to Chas.

ORE.—K etchum Krythons, Sept. aq: The first fore of men at work on the Ewening mine, an extendibility of the Morths of the Morths and palent of ore-day in the state of the Morths of the Conting mining property by V. S. Anderson to Enterprise and the state of the Morths of the ore. Michael mines at Vankee Ford district, was received the mining property by V. S. Anderson to Enterpring and the Stanke Good of the Casey has been as a freak fluide and the Morths of the Morths of the ore. Michael on the Morths of th

Men at work on less than the Minnie Mereal Moore mine were sinking a sump some ten feet distributions of the main minimum of the minimum of t

BRUSH (\* REEK.— Elk Mountain \*Pilot, Sept. 22:

The Brush creek district has been more active this found that locality all planes on the market and the season will dot that locality all planes on the market and that season more work done this year than usual, and it has given accountant another than usual, and it has given accountant another work to push development another process. The Tomichi Valley amelier, at Gunnison, is enjoylar a supply of ores, and running satisfactors, process and the management. The August framway is forthy to the management. The August framway is correct that a shipment alone already commenced. The being worked by Messrs. Brownell and Roohe. The Covernor Tabor lode on White House mountain is a shipment of ore this fall. J. H. Cultis is in town ore. Shipments have already commenced. The as hipment of ore this fall. J. H. Cultis is in town ore. Shipment of ore this fall. J. H. Cultis is in town well all summer, and all summer, and thinks he has been working to be a passed to be a passed by the passed been working to be an arch property, on the creek is to on a very summer.

#### COLORADO.

ten stamps to dry crushing, for the purpose of work-ing the over now being produced by the cult. The old Thy-their present facilities and equipments, the old Thy-their present facilities and equipments, the old Thy-top has a bright future before it. Mr. H. T. An-drews visited the Vulture mine, recently, and praises its management. The mill is running day and might.

CARLISLE,—Cor. Southruges Sentines, Gept, 20: The mines in this district set all looking well and the prospects of the eamp are better than ever become the Turk mine; owned by Davenport and some the Turk mine; owned by Davenport and some in-law, is doing well and the owners expect to have a safe in the second and the owners same lead as the Carlisle mine and is the second mine though it, is looking splending, and the owners same lead as the Carlisle mine and is the second have a safe in prospect. The Bank mine is making paying mines of the district and is owned by Hinkley & Hausman. The Carlisle mine has 40 stamps from 120 to 150 paying mines of the district and is owned by Hinkley & Hausman. The Carlisle mine has 40 stamps are beginned to the control of the district and is owned by Hinkley & Hausman. The Carlisle mine has 40 stamps are beginned to be the control of the district and they will be ready for operation in operation now and is milling to tone to one per the main and they will be fashed in the product of the mine is now from 355,000 to 359,000 per month, and when the new stamps are beginned to the control of the per to be an analysing to the lead. The control of the per to the section will be increased to \$50,000 per month, and when the production will be expected to the compression magnine, of the per to the lead. There are about two meen at work for the company. They are now putting in a compression magnine, and when this is done the work in the main part of and when this is done the work in the main part of and when this is done the work in the main part of the control of the lead.

#### NEW MEXICO.

point of taking cover, atill passing through bated point of taking cover, atill passing through bated on the vein.

BELLE,—The shalt is within a few feet of the vein.

BELLE,—The shalt is within a few feet of the continues to flow treely, but continues to the will. The water continues to flow treely, but proceed a state of the continues to flow treely, but proceed in the build. The water continues to flow treely, but proceed in the build the placet of the continue is going on a quarter of a mile west of mining is going on a quarter of a mile west of mining is going on a quarter of a mile west of mining is going on a quarter of a mile west of mining is going on a quarter of a mile west of the rail-took of the content of the content.

WEST GRANITE.—The crosscut at the 400-foot level of the Rattlesnake is in 58 feet from the shall no chage to be noted in the character of the rock. The Butte cross-cut is in 246 feet from the point of taking cover, still passing through hard granife. The Elizabeth tunnel is in 671 feet, still on the vein.

HOPE.—The stopes are all looking and holding ut well, and the ore continues to be of high grade. be mill is running steadily and with highly satistic be mill is running steadily and with highly satistic both and the continued with the old turnel which eveloped by a continuation of the old turnel which as run some time since. The vein uncovered in the mean shaft and drift holds out well and is full of the considerable trouble is experienced with the considerable trouble is experienced with the considerable trouble is experienced with size.

Any own engaged in sacking for a car shipment.

OLEON GULCH.—In Olson gulch the activity continues. The Silver Chain is still being worked and continues to return bandsome profits to its owners.

THE AYTELOPE.—The Antelope is the talk of the continues to return bandsome profits to its owners.

THE AYTELOPE.—The Antelope is the talk of the continues to return the stally an extension of the Silver Chain, it is owned by Mrs. Age, Mrs. Kirby and Mrs. Miller, Interestated. The ore which is now being energy the continue to butte.

GRANITE.—Phillipsburg Mark, Sept. 24: Mine producing 'as usual and mill tunning steadily. The built on producing 'as usual and mill tunning steadily. The builton product for the week ending September 17th was 61.471.87 ounces of fine silver and 25,058 ounces of gold.

BI-METALLIC.—The main shaft, which is now being throughout a three-compartment, has a depth of through one to the air shaft which is started just in good out well, and it as a mail looking and holding the and the ore continues to be of high grade.

THE CABLE.—The Cable mill has been shut down most of the summer, but active work has been kept most of the summer. Dut active work has been kept up within the mire. On the Silvet Lake action to the sarried on. The mange active work is also being carried on. The rest in that district, however, is the strike reported teest in that district, however, is the strike reported made a shipping. The principal item of increase in that district, however, is the strike reported made a shipping. The counter made a shipman of a few ions of ore a short time ago which averaged over \$500 to the ton, and are now wire a sacking for a car shipment.

MVEST OF ANACONDA,—Revises, Sept. 80: The mining outlook has been considerably brightened the past two weeks, partly by the organisation of the Georgetown Consoldared Mining Co., and also from the desired west of the district and the district west of the district of the given of the district of the district west of the district of the district west of the district west of the district of the district west of the district of west of the district west of the district west of the district of west of the district west of the district west of the district of west of the district west of the district of west of the district of west of the district west of the district of west of

#### MONTANA.

in the Virginia lode all tend to stimulate the nerves of those interested there.

when the west side then diffing on the West Onisaino Commerced.

WEST ONTARIO.—A visit to the West Onisaino group, on the west side of Empire campon, near the bead, revealed the fact that remarkably fine progress and all force now is applied to subking the shaft. Becample of the west subking the shaft, becample the shaft in developments was being made. The work of the mail force now is applied to subking the shaft, Becample of the westward to crosscatt the vein will be in order.

Sahrson Doltwes,—Manager Moman has a seriest portion of his gamen kept bury holding down will be in order.

Sahrson Doltwes,—Manager Moman has a seriest portion of his gamen kept bury holding down in the water trabes at so fact.

The water trabes in 20 has, and on the outside the water trabes in 20 has, and on the outside the water trabes in 20 has. The DALY NAND OUTSHOT—The Daly now the camployment for 180 men, and on the outside several improvements are being made and preparations to a long winter's work altended to. The several improvements are being made and preparations of the fact of the fortain page to. The fact of the fortain page to. The sinking in the saveling ground, Large durantities of the fortain page to. The fact of the fortain page the fortain page in the outside that of the fortain page the to considerable trouble to the fact sinking frounds. Large quantities of timbers and lagging are being laid in at the Ont tart in the well agging are being laid in at the Ontential and the paging.

hanks of this city report the receipt for the week and \$45,050.49.

The receipts for the previous week were \$43,052.79.

The receipts for the previous week were \$43,052.79.

The receipts for the previous week were \$43,052.79.

The receipts for the previous week were \$43,759.59.

\$45,797.80.

\$45,797.90.

The hanks week was as,oat the ounces of bullion, and \$48,052.90.

The preceipts of the previous week were \$45,050.55.

\$45,797.90.

The hanks were \$45,050.55.

The hanks were were \$50.50.

The week were \$50.50.

The week were \$50.50.

The hanks were were \$50.50.

The week were

#### HATU

Wolf Creek.—Several placer claims have been ocsted lately on Wolf creek and rich gravel beds tre reported.

worked by drifting.

THE OLD DUTCH LEDGE.—This quartz mine was a ton in free gold, regardless of sulphurets, in which a ton in free gold, regardless of sulphurets, in which he aronk is very rich. It is on Powell creek near the heperate, Biglow has relocated the ledge and has a connect on the surface. Recent assays has opened the ledge with three tunnels, one of them has opened the ledge with three tunnels, one of them has peperate to tap the show that the quartz is improving in richness, and has the LEDGE.—Mr. Keissling is pushing work on the Knox LEDGE.—Mr. Keissling is pushing work on the Knox ledge, also in the Applegate country, and has tun a tunnel ras feet on a feeder work on the Rox ledge, also in the Applegate to the main ledge, taking out good pay rock at every foot.

PLACER AND QUART.—Jacksonville Times, Sept. 24; Miners are getting ready for winer, I. M. K. Lytle is engaged in crushing some one from the Roten ledge, which promises of from the Roten ledge, which promises in the Coff & Triplett placer unine in Bushy well. J. B. Hutch bas purchased for gason a bushy one on bush of the Lytle base some set and Mining and Mining and Mining and Mining and Mining and Mining the set of the Rote of the County, which are said to be quite inch. The Jackson county, which are said to be quite inch. The Jackson county, which are said to be quite inch. The Jackson in going down on the ledge where the rich ployed in going down on the ledge where the rich ployed in going down on the ledge where the rich ployed in going down on the ledge where the rich ployed in going down on the ledge where the rich hill subtime soon as the large well which is being the furnish the water supply of water. They will five them a good supply of water. They will be said to have a first-class mining claim in Grave also may as soon as the large well which is being several new claims will be opened during the rich will give them a good supply of water. They will new ledge district are on the will shop by Grant's pass never leading the next shop in the worked by distributions. A number of new months, and improved machinery employed altoge on the said of the new of the worked by distributions. The number of new worked by distributions, has commenced and is being worked by disting.

The DUTCH LEDGE.—This quarts mine was aton in the going worked by disting.

The DUTCH LEDGE.—This quarts mine was also in the going to go with an arears and paid \$25 and the place of supply with an arears and paid \$25 and the going and supply should state the supple supplemental and side supplemental s

### OREGON.

the mine will be done with Rand drills. This will be mine will be done with Rand drills. This will be seen to core from bis Silvet Beat has about a carload of ore from bis Silvet Beat mine read vot stipment. The ore is worth state per Sante.—White Oaks Interpreter at El Paso.

SALE.—White Oaks Interpreter at El Paso.

SALE.—White Oaks Interpreter at El Paso.

South extension of the Pasoine muse, at Pinos Alios, was purchased by Bell & Stevens of that place for operate a mill at Pinos Alios and thoroughly under seam purchased by Bell & Stevens of the mine own and operate a mill at Pinos Alios and thoroughly under stangen of the Pasoine to parties who have been statted, and what they are doing. The sale of a mine like camp for years, and know exactly what the camp for years, and know exactly what the worth more to her camp that do have been statted, and some business appearance, such as have been statted, and some business are chiefly interested in guiling about the development of the country, but are cohiefly increased in guiling the public in orbusiness of the Pinos Alios and the camp for the orbusiness of the Police in orbusiness of the Police in orbusiness of the development of the country, but are cohiefly increased in guiling the public in orbusiness.

## GREGORY &

San Francisco, Cal.

Cor. Fremont and Mission Sts.,

PAYNE'S VERTICAL AND HORI-ATLAS ENGINE WORKS ENGINES ENGINES, BROS' HOISTING

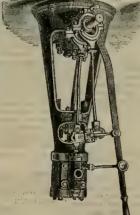
PICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY. OLLO SILENT GAS ENGINES.

DODSON ENGINE GOVERNORS,

KOKLING INDECTORS AND EDEC-TORS, NATHAN AND DREYFUS OILERS.

IVAE VAD BODIEK SVA MILIS . ING CO'S KUBBER GOODS. DISSTON'S CIRCULAR SAWS

OIF2".



FROM 2 TO 100 H. P., ALWAYS IN STOCK

**ENCINES** Sud BOILERS

YACHT ENGINES.

BURKES IMPROVED STEAM BICKLORD'S POWER DRILLS. TOULS, SON'S MACHINISTS PRANK & CO.S WOODWORKING N. A. PAY & CO.'S WOODWORKING

STURTEVANT BLOWERS AND EBRIN BYND SYM BUNDES

SHIMER MATCHER HEADS.

MASSEY'S STEAM HANNERS, BULLOWAY FIRE EXTINGUISH-EES, BEADLEY CUSHIONED HAMMERS LORBINE WATER WHEELS.

EEISBEE-LUCOP MILL,

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of amalgamation may be applied.
At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 meah

All wearing parts easily and obeaply replaced. May be seen in operation at the New York

Metallurgical Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.

Oersincests as to performance of the Mills, and any information required, furnished on pplication.

LHE EKIZBEE-LUCOP MILL CO.

Office, 145 Broadway, cor. Liberty St., NEM YORK,

PIDGER MOOD W.E.G CO HOOKER & LAWRENCE, Gen'l Agents.

WILL SUPPLIES

MHEELS CAR CHILLED

IRON CASTINGS of all descriptions.

AND RAILROAD CASTINGS.

MEDAL AWARDED, MECHANICS' FAIR.

STEIGER & KERR, JAS, W. REER,

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

DEWEY & CO., Wo. 260 MARKET ST. | PATENT AGENTS.

JOHN TAYLOR & CO., Sole Agents, lift to 118 Pine St, San Francisco.

work, they are indispensable, as no foreign and senced and indispensable, as no foreign are indispensable, as no foreign are indicated in the first of the first

The most perfect appliance for people engaged Smeltirg, Dry Crushing, Gunce Three Oglessive Arthurs, Lead Corroding, Three ing and Stock-dariving, and all other compact there is dust, poisonous vapor, or had one work, they are indepensable, as no foreign substant harmonical and any many are indepensable, as no foreign substant harmonical with they are indepensable, as no foreign substant harmonical with they are worn.

and Salivation. Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

AND LUBRICATING

California Inventors Arreton

asion. Office of the Miving and Borraviro Press si koific Rural Press No. 230 Market St., San Francisc ilevator, 12 Front St.

PNEUMATIC PULVERIZER, Practical Treatise on Hydraulic Mining. WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager.

POWERFUL OPPOSING CURRENTS

10 TO 200 TONS PER DAY,

Including a Sectional Steam Boiler supplying all the power required.

PHEUMATIC PULVERIZER COMPANY.

E V FOCKENBYCH and, E. F. A. LOCKENBACH, Sup't,

FOR HEMOVING STUMPS AND TREES,

Vigorit "LOW" Powder,

Blasting Powders.

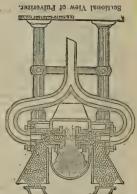
("DYNAMITE" or "GIANY")

NILHO-GI ACEBINE

No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.

Liberty St

San Francisco Cal. PARKE, LACY & CO., Agenis, and BOILERS, 300 Sizes



2 and 4 Stone Street, NEW YORK,

Write for Particulars.

## Aetallurgy and Ores.

### SMELTING and LEAD CO. **SELBY**

416 Montgomery St., San Francisco.

And Assay Office, COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

ENCINES, BLUESTONE, .... MANDEADOURNESS OF ....

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO., Under Chamberlin Patent.

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GEVSSMYKE VAD SANDKIES' ELG CHEMICYF VBBYKYLAS VAD CHEMICYTS' I

Companies, Milling Companies, Prospectors, et all stock of Balances, Furnaces, Muffles, Crucoccorfiors, etc., including, also, a full stock sale. 8 - 4593 Sine Street, 8 11-411

The prepiration of old and Silver Tables, showing the value per papiration.

The Our Gold and Silver Tables, showing the valuable ounce Troy at different degrees of finences, and valuable or propulation of assays in grains and tremmes, will be sent free upon application. Agoing testing the factor will be sent free upon application. Agoing the factor will be sent free upon application. Agoing the factor of the factor of

NO. 23 STEVENSON STREET, Nevada Metallurgical Works.

Mear First and Market Streets, B. F.

Отев worked by any Process.

Ores Sampled

Plane and Specifications drainished for the most suitable Process for Working Ores, Specification paid to Examinations Assaying in all its Branches. Analyses of Ores, Minerals, Waters, etc. Working Tests (prectical) Made.

Mines; Plans and Reports furnished,
O. A. LUCKHARDT & OO.,
(Formorly Huhn & Luckhardt, )
Mining Engineers and Metallurgists.

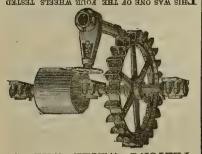
METALLURGICAL WORKS.

S18 Fine St. (Basement, lorff Street, - SAN FRANCISCO

Assaylug and Analysis of Ores, Minestals and Waters. Mines Examined and Reported on. Practical Instruction given Treating Ores by in voved proceeses.

G. KUSTEL & OO., Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED by the labe, company at Grees Valley, Gal., and five one, descending all competitors. Send for the cont., descending all competitors. Send for Livey 90 2 per cont., descending the cont., descending the cont., descending the cont., and control of the co

L. PETERSON, MODEL MAKER, INVENTORS, TAKE

sopper and bress.

Experimental mechinery and all kinds of metal, the

QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE TEL

IIGS and TROMMELS. CORNISH ROLLS,

**ENCINES AND BOILERS.** 

FRASER & CHALMERS STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

This Mill as a Crusher and Ful-verizer is without rival. Is in operation in lead-

**ENCINE2** PUMPING

M A CHINERY,

CORNISH

'SAMDA

NEW YORK OFFICE:
Room 48, No. 2 Well Street. GENERAL OFFICE AND WORES:
Fulton and Union Streets, Chicago, III.

UTAH OFFICK-SALT LAKE OITY, UTAH. MEXICO OFFICE; No. 11 Oalle de Justez, Ohlbushus, Mexico.

LEFFEL'S JAMES

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado.

These Wheels are designed for all purposes where limited quantities of water and high breals are designed for all purposes where power with less water than any other wheel made. Being placed on horizontal shaft, the power is transmitted direct to shafting by beits, allegensing with gearing.

Estimates turnished on application for wheels specially built and stapted in Estimates turnished on application for wheels specially built and stapted in the state of the form of construction, as well as the "Furbies information can be obtained of this form of construction, as well as the ordinary Vertical Turbines for Wooden Penstocks and in Iron Globe Cases, tree of cost, and playing to the manufacturers. Mining Turbine Water Wheel.

1AMES LEFFEL & CO.,

or 110 Liberty St., New York,

TRAMWAYS.

MIKE ROPE

HYTTIDIE, 2

HOISTING

Springfield, Ohio,

FRASER & CHALMERS, General Agents, Chicago, Ili., and Denver, Col.

PARKE & LACY, General Agents, San Francisco, Cal.

COLD

Quartz, Gravel and Placer Mines!

**SMALGAMATING** Silver-Plated

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

653 and 655 MISSION ST., SAN FRANCISCO, CAL.
E. G. DENNISTON, Proprietor.

NOTICE.—My Silver-Plated Plates are well known and used everywhere. They have proved superior to all others in durability and weight of Silver.

## THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed



San Francisco, m Bank of Cal.

1 25 Free

DHAS. & WM. MONTGOMERY, Prop'rs.

#### SHAREHOLDERS' DIRECTORY, WINING

MISHE NO TO 119	Y G A MY GOAR	TIAR TWONITH	GHTVH.I T'MA OW	T MOTTADOST	L ARVANOD
		MENTS.	YZZEZZ		D
вя В. Е. Лопанава	пито сил ваяя ч	DIALITAGE GNA SURUTUPIO	uM ni stnamažitna	AY PROM ADV	Сомригир нувку Тилвар

7 4qe8 06 38 yrsonoyluoM 606. aravar W. A. shavoY o' M. M. W. sharollikoD noO 6 38 yrsonoyluoM 606. aravar W. A. shavoY o' M. M. W. sharollikoD noO M. a' W. sharollikoD noO M. a' W. sharollikoD noO M. a' wa sirrollikoD noO o' m. a' yrsonoyluoM 523. a' yrsonoyluoM 52	ı
NAME OF COMPANY, LOCATION, SECRETARY, OFFICE IN S. F. AMOUNT, PAYABLE	ı
Newada Queen M Co Newada H Desa309 Mont.omety St	1
00 foo. lenund als vramoglunolk 608. asawah W A. abawah. oO M sinterity 2 leD mo) Ti 200. lenund als arif 308. nosil Will D. abawah. OO M controlly as arif 308. nosil Will b. abawah. oO M controlly as arif 308. arif 308. nosil which in the original of the property of th	l
NAME OF COMPANY, LOCATION, SECRETARY, OFFICE IN S. F., MEETING DATP.	ı
Absemite Queen 2 & L.M. Co Critior 2 32 32 Sept. 3 Oct. 10 Oct. 29 R. Bunker 628 Montgomery 88	ı
#8 enfil QEZ. (2004) I O. W. o. 0. 4 o. 4 o. 0. 4 o. 0. 4 o. 4 o. 0. 0. 4 o. 0. 0. 4 o. 0. 0. 4 o. 0. 0. 0. 4 o. 0. 0. 4 o. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	
Boute Cou M Co., Californie, 7, 60, Aug 12, Sapt 16, Oct 8, 12, W Wessions, 399 Montgomery 8t Best & Pichher M Co., Wessda, 38, 60, Ang 15, Oct 8, O., Nov 7, J. Crockett, 399 Montgomery 8t Best & Pichher M Co., Wessda, 33, 50, Sapt 15, Oct 8, Oct 8, W Wessda, 32, Montgomery 8t Champton M Co., Galifornia, 25, 10, Ang 25, Oct 8, Oct 8, W Wessda, 252 Montgomery 8t Champton M Co., Wessda, 35, 30, Ang 25, Oct 9, Oct 18, Oct	
48 Vanongaron 1968. Struff H. L. 1900. Of 409 St. 1974. Of M. 289. Montgomery 38. Of M. 289 Montgomery 38. Of M. 289. Of M. 28. 350. Montgomery 38. Of M. 28. Montgomery 38. Montgomery 38	I
COMPANY	1
ASSESSMENTS.	1

#### 3. F. Stook Exchange. Table of Lowest and Highest Sales in

50	04		103.	33. 34.	aifu l.
****		gg"	98"	98.	Lowa
					Independence
09°T					Holmes
3 32	3.15			01.4 dr.8	Hale & Morerosa
3 30	30.8	1.4 08 8	09 \$ 98°F	3,80 4,50	Gould & Ourry
			1111 1711		Grand Prize
ăi,i	31.1	08.I 01.I	1.50 1.50	os,i ot,i	Exchequer
7714		18 18			Ептека Оов
****	****	1.77	**.* **		E.85t B. 6 B
****	****	*** ****	*** ****	*** ****	Dagley
****					Central
04"	09*	ce, u),	OT T 98'	06" 08"	Стоскет
62.85					Orown Point
30 1/	34.3	47 82.8	03.8 03.7	80. 30.7	Con, Pacific
****			og	00' 05'	Caledonia
			0g	09'T 07'.	Con. Imperial
62.25	80				Confidence
					Спольного
08,8	00 6	35.85 4 45	00.8 03.4	08,4 03.4	Champion
48. £	0011			9 7 00 7	одпоцваЮ
99T	95T				ondelladi)
			ELT LT	17 18	Bulwer.
1.00	<b>68</b> .	30 I 00 I	3f.f 07.1	85 I.20	Ruling
omtor					Bodie Tunnel,
02,2	00.2		06.8 08.8		Вептоп
08, E	09°T			06.I 82.I	Bodie Con
87.		94. 09.	87, 07,	69, 66,	Belle lale
96"		00 T 98"	00'T 96'	26. 28.	Baltimore
1.50	19.1			1,00 I.50	Bullion
S\$.4	07.8	T3   SI'#	87.8 08.8	94'9 06 \$	Best & Bolcher
			U₽		Brobhy
UP. P		1.30 5.5u	00.7 48	00:2 06 \$	Belcher
22.	ST.	6	1		Argenta
al.I		32.1 UI.1	L'00 I 30	GI.I 66.	Andes
00.2	68,1	90'8 96'1	0P.2 82.2	L.85 2.0u	gal.A
09.8	33,5	37.8 08.8	37.4 OL.E	03.8	·····sduj.
Sept. 29.		Sept. 22,	Sept. 15.	Sept. 8.	COMPANY,
DNI		ENDING	ENDING	ENDING	
EK	AA.P	MEER	MEER	MEEK	IN AME OF
		]	1		-

#### Mining Share Market.

Navajo.... Belle Isle.

Mexican..... M.t. Diablo..... Northern Belle.

Point.

OUR ASORDE.

OUR PRIENDS can do much in aid ou our paper and the account of more account. The asserting the account of more ac ner ner & Curry....

## Sept. 29, 1872 | 12,00 and 18,00 and 18,00

Sales at San Francisco Stock Exchange.

. 200 130 Scotlon. 40 820 Union Con. 40 820 Union Con. 1.20 650 Utan. 3.70 650 Scotlon.

82.1 31.1 32.1 02.1 02.1 32.1 37.7 37.7

4.05 4.30 4.40 4.60 4.15 4.65 4.25 4.40

**33.** 03. 27. 07. 38. 07. 03.

60.8 08.8 81.8 02.4 00.8 00.4 01.8 52. 8. 08. 08. 08. 88. ... 82.9 82.7 03.9 87.7 62.7 87 00.7

E. A. Perrody was injured by a falling recordy.

Telegraphic advices dated Sept, 29th give the following ew York prices: New York Metal Market. | Sheek | 10.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0

MHOTESVIE.

San Francisco Metal Market.

THURSDAY, Sept. 29, 1887.

Quickelly Respond to the control of the control of

Mining stocks continue very dull indeed for a long stocks and prices are low. Meter a long time before has there been any and depression as now exists. The public seems have given up inferiest in the whole thin pave given up inferiest in the whole thin pave with speculative propensities seems in passed the steam of the properties of the particles and direction in the direction purchase of land or lots and dropped the hardwest.

Meantime, however, up on the Comstock the Meantime, however, up on the development. They are etarting up new mills and working their mines, apparently, for what there is in them, rather than for stock-market purposes. The output of ore is increasing, as is the bullion production, yet there is less public interest in the developments to-day than was the case when most of the mines were being worked as when most of the mines were being worked as stock-jobbing operations.

The San Diego Union says: John B. Farrell, amperinteendent of the Owens mine, located at amperinteendent of the Owens mine, located this city yesterday. He reporte the claim as looking well, and says that in a short time the working of the Old San Diego the will be renewed. Spesking generally of the miney interests in this county, Mr. Farrell says they are all doing pay work, and to be made valuable ore-producing properties all that is necessary is deep working.

### Inventors. List of U. S. Patents for Pacific Coast

Reported by Dewey & Oo., Plonest Patent Solicitors for Pacific States.

From the official report of U. S. Patents in Drwsr & 10.'s Patent Office Library, 220 Market St., S. F.

FOR WEEK ENDING SEPTEMBER 20, 1887.

370, 229.—LAST FASTENER—W. R. Abrams, B. Inspurg, W. I. E. Iensburg, W. I. 370, 233.—TUMICATOR—G. S. BOIn, Salinas, Calline & 370, 244.—BOOK HOLDER AND COVER—Cline & 370, 244.—BOOK HOLDER AND COVER—Cline & 370, 244.—HARROW ATTACHMENT—C. Kessler, Pendleton, Or. Choo, Cal.

370, 205.—HELLY COUPLING—Jas. F. McConnell, Company of the statement o

370,348.—CLOTHES LINE—H. E. Percival, Spo-

MOTS.—Copies of U. S. and Foreign Patents furnished & VOTS.—Copies of U. S. and Foreign Patents (by mail to Potents and Poteign patents or telegraphic ordor). American and Foreign patents for Pacific Coast inventors transacted with perfect seourity, at reasonable inventors transacted with perfect seourity, at reasonable states and in the shortest possible time.

### Notices of Recent Patents.

worthy of special mention: Foreign Patent Agency, the following are Among the patents recently obtained through Dewey & Co.'s Scientific Press U. S. and

Foreign Ratent Agency, the following are overly of special mention:

Ore Coucentratore.—John A. Jones, Tusca-Ore, Mo., Wo. (No. 370,145, Dated Sept. 20, 1887, This is an improvement on that class of concentrators in which an endless traveling belt is carried by a shaking frame or table, the being fed on the entrace of said belt, to are being fed on the entrace of said belt, to gether with a stream of water, whereby the lighter or worthless particles are carried down in the intention of the belt, while the heavyer particles for carried down up by it and finally washed off below in a stank through which the belt passes. This inventor, to accomplish the desired movement, places a track, the farmes and belt may have in moven or corrugated surface, on the nature that the desired movement, places a track, wheels travel over the ententing table as track and one and the shaking table as track and hear the strack out the entention to the corruption of the suck arising to said by means of the other moved from side to saide by means of the other moved trom side to saide by means of the other moved trom side to saide by this inventor is to other method devised by this inventor is to other method devised by this inventor is to the orang frame. This movement, in addition to the orang tends to keep the ore in suspension, whereby tends to beep the ore in suspension, whereby tends to be or sulphurets are more effectively separated from the talings.

In the best or sulphurets are more effectively separated from the talings.

### Mining Tunnels Under Private Ground.

Hining Tunnels Under Frivate Ground.

The Supreme Court has handed down its decision affirming the judgment of the lower court in the case of the Amador Queen Mining Company vs. William Dawitt, the action becomen a right of way through a turner gelein and Murphy and land of since the right of way through a turney glock, and olsines the right of way through a mining men, as it involves the question whether than mining men, as it involves the question whether than the cometavy. The case has been watered by the Suprey on a sight of the company was the company which is affirmed by the Suprey of the company of the constructed, as the the trace of the right of way the the company of the compan

OUR miners are very much indebted to the Minute And Sourwritte Press, of San Francisco, the Rocky Mountain Mining Mew for copyling extensively from the Courier, and so aiding in fetting people know that we have a rich mining the Courier.

## A Paying Drift Mine.

ons week's labor, 60 men working, was 252 comees. There were several large and handsome some nuggets, and all was very coarse gold—as nice looking as any seen in Sierra county. have taken out \$10,400 for the claim, and two cleanups are yet to come for September. The cleanup, on the 19th of September, for the previ-September. This last payment returns to the cone safe of the contents of the cone safe of the cone of some dividends, aggregating \$21,000, and an-For four out of the past five months the Bald Mountain Extension drift mine, at Forest City, Sierra county, has been yielding hand-

mining; and when they started to work the extension of the famous Bald Mountain drift mine, he was one of the company who began eventually became an owner in a newspaper in that county. Being located in the midst of this goldfield, he naturally took great interest in Sierra county years ago to learn the printer's trade. He stuck to the printer's case, and an apprentice with the proprietors of this paper, and was originally taken by him to One of the owners of the mine was formerly

to those who go about it as a legitimate busiany other place in the world, men have oppor-tunities which few places offer. Energy, some judgment and judicious investment in gold-mining property is likely to yield large returns to those who we objust is as a lenitimete husiand after following one business for years, a venture on another may put it within his reach. In this State, where there is more gold than come to a man from the direction he expects it, for month after month it was all outgo. But finally the channel was struck, and now the mine is paying well. Fortune does not always there was a long succession of assessments, and For a long time, while the tunnel was being run for the channel, and the mine being opened,

ness proposition.

A correspondent of ours at Downieville writes as as follows concerning the mine:

A correspondent of ours at Downlevine He mine:
Entrors Fress;—Though the kindness of air Extracts as as follows concerning the kindness of air Extension Co.; a mine, I was enabled to pay the the kindness of air Extension Co.; a mine, I was enabled to pay the them of the the them of the them of

### Bullion Shipments.

We quote shipments since our last, and shall

We quote shipments since our last, and aball be plassed to receive lurther reports:

Moulton, Sept. 23, \$5504; Blacbird, 21, \$7500; Bberhardt-Monitor, 13, \$1500; Germans, 20, \$5504; Black, 21, \$1500; Germanis, 22, \$3569; Queen of the Hule, 22, \$3569; Queen of the Hule, 22, \$3569; Germanis, 22, \$3569; Queen of the Hule, 24, \$1169; Hanner, 24, \$2000; Germon the Hule, 25, \$3569; Dexington, 24, \$1569; Manner, 25, \$1660; Queen of the Hule, 25, \$1250; Lexington, 24, \$1540; Geen of the Hule, 25, \$1250; Lexington, 24, \$23,352; Manner, 24, \$1560; Geen of the Hule, 25, \$1269; Hanner, 24, \$1546; Moulton, 24, \$25,400; Germon, 26, \$350; Moulton, 24, \$1560; Moulton, 26, \$25,400; Germon, 26, \$25,400; Hanner of the Hule, 25, \$1260; Lexington, 24, \$25,400; Germon, 26, \$25,400; Hanner of the Hule, 25, \$1260; Hanner of the Hule, 26, \$1260; Hanner of the Hule, 27, \$1260; Hanner of the

A FAST DEITT.—Last week four men working on a shift in the Sierra Nevada sent a driit on the S2O level 91 feet. They were trying to best a record of 89 feet made in the same mine some years ago when the mon were essaying to make 90 feet. They timbered the last drift and last drift, besides. Mr. Lyman, the superintendent, observed during the week that the men were " unshing," but did not know what they were at.—Virginia. Enterprise.



ELECTRIC DEVELOPMENT COMPANY.

Electric Motore, Dynamos, Tramezie, Elevatore, Signals and all kinds of Electrical Systems for lighting and ramenission of power, either direct or with recease Batteries, Incandescent & Arc Electric Lights.

For Mines, Hoisting Works, Mills, Reduction Works,

The only complete and authorous area in the United States SEUE-RECTUCATING ARC LIGHTS form night from two topics and authorous working the Whole States SEUE-RECTUCATING ARCHERING Into the united from the United States SEUE-RECTUCATING ARCHERING For whom his one and actions are means of working the Whole States SEUE-RECTUCATING ARCHERING FOR Into the united states of working the Whole States Seuer and action of the united States and action of EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

NATIONAL IRON WORKS

N. W. Corner Main and Howard Sts., San Francisco,

and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES, CASTINGS AND FORGINGS Description

IMPROVED PORTABLE HOISTING ENGINES. ALL WORK TESTED AND GUARANTEED.

NATIONAL ROCKER QUARTZ MILL.

KENDALL'S PATENT, AUGUST 24, 1886.

CAPACITY, 12 Tons in 24 Hours, 3 H. P.

MARSHUTZ & CANTRELL, Sole Manufacturers.

MARSHUTZ & CANTRELL. We challenge competition with Stamps, Ball Pulverizers or any other ore crushing machines now before the public,

Our U. S. And Foreign Patent Acenor Home Cour U. S. And Foreign Patents advantages as a presents many and important advantages as a set alienteer, great experience, brorough system, britishinest, great experience, brorough system, inventions in our own community, and our inventions in our own community, and our most extensive law and reference library, con most extensive law and reference library, con finish and mechanical publications, and mechanical publications, and mechanical publications, our Agency will have the benefit of an illustration of a description in the Minutus And Scient, tries which graves, and obtain Patents in all countries which grave the besent to have for inventors on the Pacific Coast have large and to inventors. The patents and out of havenfors. The patent to inventor and force in the stand for the patents are as long from the Minutus A. We can send to inventors and force as to the patents and potents and most velicities. We can patent best and most velicities and force in the season of the patents of the pest and most velicities and force in the best and most velicities in the patents of the pest and most velicities in the patents of the pest and most velicities in the patents of the pest and most velicities in the patents of the pest and most velicities in the patents of the pest and most velicities for face as to the Coast have the best and most velicities for face and coast inventors are far superior. Advice and Circulars free.

Description are far superior, Advice and Circulars free.

Bactor Estent Este St. Electric Regents.

We can be the season and the season of the coast inventors are far superior. Advice and Circulars free.

DANIATE

Patent Agency. Dewey & Co.'s Scientific Press

DEWEY & CO., Patent Agents, No. 220 Market St. Elevator 12 Front St. S. F. Telephone No. 658,

CONTRACTORS, ATTENTION!

DIDS ARE INVITED TO CONTINUE A TUNNEL.

By bundred feet or more. Dailling Machinery on
the ground and now in operation. For further particulars, inquire of

WALTER C. CHILDS, Glencoe, Celsverse Co., Cel. DS, CLLESPY & CHILDS, 193 Cellfornie St., San Francisco

"DR. PIERCE'S" LIFE RENEWER,

DR, PIERCE'S New Cal

Strong Strain

Machinery, Models and Buildings

Mechanical Photographera,

RUNNELS & STATELER,

Wages are \$2.50 to \$2.75 per day, with prompt pay-ment every month. These towns are easily reached by stage from Reno, Oroville of Chico.

MINERS WANTED,

Price 50 cents, po t-paid. For sale by DEWEY & CO 220 Market St., San Francisco, Cal.

od Quartz Miners can find steady employment at

BOOKWASICOTOM OF THIM DESIDE AND BANG BANG BANG TO CHARIFOR A STANDARD WORK.

A STANDARD WORK.

Prectical work of 1889 pages gives with illustrate damong been declar how to build or repair at millustrate dam construction and reducing taken to thore were to be the contrained that the standard been declared to well the well-known ow in use, with a construction and radiomistrate how the standard been declared to the well-known ow in use, with a complete of escription as to thore well-known with a complete of escription as to thore and the standard been declared by the standard by the standard been declared by the standard by the stan

Leffel's Construction of Mill Dams and

ATTENTION, MILLWRIGHTS!

ARROW'S LEACHING GOLD AND SILVER ORES, the most complete is issued on the subject extent; left pages four wood cuts. Youly indexed, Plainly written for four wood cuts. Youly indexed, Plainly written for practical men, in cloth, \$5. Soid by Dawny & Co., S. F.

are book on the treatment of gold and silver over of uniforms, by other or are book on the treatment of gold and silver or understand or or other or who seek of the other or other or

deficient ov Gold and Struer Oces (Second Edition) and the Extraction of their Bespective Metals without Guideniver. By True Kroster, M. E. 1880. BY Guido Kustel, M. E.

Books on Working Ores.

Don't Fail to Write.

Persons receiving this paper marked are requested to examine its contents, terms o subsected to examine its contents, terms o subscription, and give it their own patronage, and, journal, and making its value more widely known to others, and extending its influence in the country of the coun

Complimentary Samples.

S. R. PRENTISS, Greenville, Oel.

GENEERL AGENTS, SAN FRANCISCO, OAL

BYNDMYNN' NIETSEN & CO.

10DSON FOWDER IMPROVED. GETYLINE-DANVMILE, Stronger than Dynamite and even Safer in Handling. Of Different Strengths as Required. GIVAL FOWDER OF DYNAMITE, The Safest and Strongest High Explosives in the Market.

THE GIANT POWDER COMPANY

MOTICE.—All our plates are guaranteed to bave ne full weight of silver agreed upon, and are feeted be, tee leaving our works, thereby avoiding the complainte bout lifet weight, made so often before we started

## JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

BATTERY SCREEUS AND WIRE CLOTH

HYDRO-CARBON ASSAY FURNACES Agent for HOSKINS'

> IN QUARTZ, GRAVEL, OR PLACER MINES. FOr SA VINC

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

NO. 108 FIRST STREET. SAN FRANCISCO NOVELTY AND PLATING WORKS

## Iron and Machine Works.

## CALIFORNIA MACHINE WORKS,

WM. H. BIRCH & CO.,

ENGINEERS AND MACHINISTS,

WO. 118 Beale St.,

Standard Co.,

Tourners of

Brodle Rock Crushers, Hydraulic, Side Walk and Hand-Po Side Walk and Hand-Po Et Avan Pri Ry Steam Engines, Flour Mill, and Mining, Saw Mill and Dredging Machines Brodle Rock Crushers.

Manufacturers of H. E. Henrickson's Patent Automatic after Catches for Elevators. All Einds of machinery and rapaired. ELEVATORS.

#### Golden State & Miners Iron Works.

Marufacture Iron Castings and Machinery of all Kinds at Greatly Reduced Bates.

STEVEUSON'S PATENT

#### Mold-Board AMALIGAMATORS,

Golden State Pressure Blowers.

et 8 .moslow & brawoH neewted .ts relies

SAORAMENTO, OAL, UNION IRON WORKS,

ROOT, NEILSON & CO.,

MACHINERY FOR MINING PURPOSES. Engines, Boilers, Steam

Front St., bet. N & O Sts., Sacramento, Oal. Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fifted up and repaired.

Front St., bet, M & O Sts., Sacramento, Oal.

THOMPSON BROTHERS,

### ENKEKA FOUNDRY

морчиная от слетиев от втяму разскіртом. 129 and 131 Beale St., between Mission and Howard, S.F.

O. K. ORTON.

WILLIAMS OF GENERAL MACHINERY,
Works, No. 315 Mission St., San Francisco,
Special attention given to Woodworking Machinery,
Steam and Gas Engines. Correspondence solicitest.

### MINING FNGINEERS.

MINING EXPERT AND GEOLOGIST. Civil and Mining Engineer W. A. GOODYEAR,

Address "Business Box A," office of this paper, San

HOZZ E BROMNE'

Mining and Hydraulic Engineer,

No. 307 SANSOME ST., SAN FRANCISCO.

SAW COMPANY N. W. SPAULDING

NO MEAS IN

SPAULDING'S

Inserted Tooth

CHIZEL BIT

CIRCULAR

SAMES

nds made to order. Send for Descriptive Cata-SAW MILLS AND MACHINERY



THE RUSSELL PROCESS COMP'Y. Sinc, Copper or Brass Screens for all purposes. Cana

C. A. STETEFELDT, President.

ROOM TOOM NEW YORK OFFICE, 18 BROADWAY

> SHIPPING AND COMMISSION MERCHANTS, JAHW∃N

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Froducts. General Insurance Agents. Burece Agents and the chief cities of the United States, Europe, Australia, India, Ohina and the principal all the convergence of the Parish of the Company of the Company of the Principal States, Company of the Principa

General Agents for the Pacific Coast of MATIONAL ASSURANCE CO., of Boston, Massa. ATLAS ASSURANCE CO., of Boston, Massa.

H. T. Scorr, Vice-Pres and Treas.

Location of Works, Potrero. P. O. Box 2128.

GRO. W. DICKIR, Мапаует. J. C'B. Gunn, Seoretary.

Office, 216 Market St., S. F.

BOILDERS OF --

Agents of the Cameron Steam Lump STEAM, AIR, AND HYDRAULIC MACHINERY.

Home Industry. All Work Tested and Guaranteed.

Polleys, Self-Feeders, Exc., Erc. Зтамез, Рамз, Зеттіена, Ветовтз, Вевт Ноізта, Уептільілис Ремя, Воск Вкелекня,

SHAFTING, HORIZONTAL ENGINES, AUTOMATIC CUT-OFF ENGINES, SAARPHUE VERTICAL ENGINES,

Office, 220 Fremont St.,

NNION IBON MOKKE TRY OUR MAKE, CHEAPEST AND BEST IN USE.

SCESSORS to PRESCOTT, SCOTT & CO.

[ESTABLISHED IN 1865.] HINCKLEY, SPIERS & HAYES, Proprietors.

MANUFACTURERS OF-29D F.LUDOISCO

MARIUE EUGIUES AND BOILERS.— Propeller Engines, either High Pressure or Compound, Stein or Side-wheel Engines.

MINING MACHINERY.—Holeting Engines and Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Compressors, Air Receivers, Air Pipes,

Crusding, Amalgamating Pans, Setti rs, Furnaces, Re-torts, Concentrators, Ore Feeders, Rock Brenkers, Fur-naces for Reducing Ores, Water Jackeiss, etc. MILL MACHINERY.-Batteries for Dry or Web

MISCELILANEOUS MACHINERY.—Flour Mil Machinery, Saw Mill Engines and Bollers, Dredging Machinery, Powder Mill Machinery, Water Wheels.

WORKS ORE WET OR DRY. Tustin's Pulverizer

**ENGINES**BOIFEBS

OF ALL KINDS,

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGENTS FOR THE PACIFIC COAST FOR THE Boiler Repairs Promptly attended to and at very moderate rates. OF BYERY DR

SPECIALTES: Deane Steam Pump.

Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater. DEANE STEAM PUMP. Corliss Engines and Tustin Ore Pulverlzers.

PACIFIC ROLLING MILL

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought f Wrought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOLL SUG DOCLIFE

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from \$\frac{1}{2}\$ to \$\frac{1}{2}\$ inch diameter and Flats from \$\frac{1}{2}\$ to \$\frac{1}{2}\$ inch. Angles, Tees, Channels and other shapes \$\frac{1}{2}\$ to \$\frac{1}{2}\$ inch diameter and Flats from \$\frac{1}{2}\$ to \$\frac{1}{2}\$ inch gives \$\frac{1}\$ inch gives \$\frac{1}{2}\$ inch gives \$\frac{1}{2}\$ inch gives

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco. HIGHEST PRICE PAID FOR SCRAP IRON AND STREL.

WINING WEN' NOTICE TO

ENGINEERS, CONTRACTORS,

and others interested in

TUNNELING, SHAFT-SINKING, ETC.

Engineers' Tables of Progress

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIONS

NEM LOBK

Section 16x16 feet; Length 36 miles.

THIRD EDITION NOW READY.

For Catalogues, Estimates, Etc. address:

INCERSOLL ROCK DRILL CO.

PARKE & LACY

8 California St., and 21 Fremont St.

SAN FRANCISCO, OAL.

GREAT REDUCTION:

BATTERY SCREENS.

Wo imitation, no deception, no planished or votest iron used, Only genuine kuesia iron in quarts dece-Panished iron screens at nearly that my former rates. I have a knye outply of Backery Soreens on hand utilable for the Hunbugion and all Stamp Mills, which will sell at 20 per cent discount.

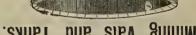


For Flour and Rice Mills, Grain Separators, Revolving and Stofe Mills, Grain Separators, Revolving and Stofe Stofe

San Francisco Pioneer Screen Works,

221 & 223 First St., San Francisco, Ca JOHN W. QUICK, Proprietor-

Mining Vats and Tanks





LEACHING VATS with FALSE BOTTOMS.

SOLUTION and WATER TANKS PRECIPITATING VATS,

ror Mining Purposes.

MELLS, RUSSELL & CO.,

22n Francisco. Mechanics milis

N'S'KEILH'

MOTORS, LAMPS Keith's Electric Dynamos,

Storage Batteries.

Electric Rallways, and Apparatus for the Electric Transmission of Power.

Office, 40 Nevada Block, Dynamos and Motors of all sizes for Conveying Power om Waterfalls for use in Mines and Mills, erected under matenty of performance.

Factory, II Stevenson St. San Francisco, Cal

San Francisco Cordage Factory

Established 1856.
Constantly on hand a full assortment of Manila Kope,
Sies Kope, Tarred Manila Rope, Hay Kope, Whale
Line, etc., etc., etc.
Extra sixes and lengthe made sto order on short notice
TUBES & CO.

TUBBS & CO. 611 and 613 Francisco.

PORTLAND, OREGON,

BAN FRANCISCO, OAL,

BALT LAKE CITY, UTAH.



PARKE

NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

Machinery

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and Iron

NOTJEZA

NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

Spring Valley Water Worke, S. F. 1 200 H. P. Starr & Co. Mills, Wheatport. ... 1 100 H. P. San Jose & Sauta (Mara Morke, S. F. 1) 25 H. P. Selby Smelting Works, Vallejo

California Cotton Mills, East Oak

La Loz Mining Co., Maxico ... 3 75 H. P. Selby Smelting Works, Vallejo

La Loz Mining Co., Maxico ... 3 75 H. P. Selby Smelting Works, Vallejo

La Loz Mining Co., Maxico ... 3 75 H. P. Santing Company, Junction ... 3 100 H. P. Santing Company Central

Alameda ... 1 55 H. P. Oakland Gas Light Co., Oakland ... 200 H. P. America ... 1 60 H. P. The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

EOH CIHCUF

BRAYTON & CO.

MINING WACHINERY,

Wo are also proporty.

We are also proporty.

Wo are also proporty.

Wo are also proporty.

WATER ACCORDENT AND DE
TAKE TO CONTRACT OF THE ACCORDENT AND T

HEINE SAFEIY

L. R. MEAD, Secretary. R. S. MOORE, Superintendent.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

AND FACILITY OF INSPECTION and REPAIRS. DURABILITY, ECONOMY,

San Francisco, Cal.

Boilers can be seen working in San Erancisco at Palace Hotel, Spring Valley Water Work Hueter, Bros. & Co., California Jute Mills, and other places. .esu ni won rewor now in use.

Guaranteed More Efficient than any other Boiler made.

RULLDERS OF

KEFRIGERATING MACHINERY for Steamships, Brewerles, and Collars.
WILSON'S PATEUT GAS-PRODUCER.
STEAM BOILERS of all descriptions.
SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarificrs, Double Effects, of STEAMSHIPS—Steam Yachte, Marine Environs and Boilers. Score. Proceedings of the Contract of the Cont

SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarifors, Double Effects, ctc.
STEAMSHIES—Steam Trachts, Marture Engines and Boilors, Screw Propellers, Centrifugal Fumps, Steamship
William of 120.4 Cold Maria.

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roashing Furnaces Mall kinds.

AIR COMPRESORS—Rope Power Transmission.

HYDLAULIC PUMITICE FOR The Rechinery.

WROUGHT-IRON WATER PIRE a Specialty. Morr.—Have Just completed order for 35 miles of 44-inch pape of 1-inch lton for Spring Yelley Water (Company, San Francisco.)

ARAW-MILL MACHINERY of all kinds

SAR-MILL MACHINERY of all kinds

BODD WATER OF THE WAY OF

WATER TUBE

Manufacturers and Sole Agents for the Pacific Coast for

MVCBELH EVYLENT SHEET-HIM BULLEYS—Fifty per cont lighter and 25 per cent cheaper than east tron pulleys; will not break in transportation.

ORE CRUSHER

F. A. HUNTINGTON,

Centrifugal Roller ZIJENN

Mining Machinery of Every Description, CONCENTRATORS AND ORE CRUSHERS,

steam Engines and Shingle Machines.

SEND LOR CHCOLAR.

### WINING PERFECT PULLEYS

SAN FRANCISCO, CAL.

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc. SLEVM ENGINES'

Ban Francisco, Cal SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco. GENERAL MACHINE WORK.

No. 45 FREMONT STREET,

**BOILER**:

First Premium Awarded at Mechanics' Fair, 1884.

Tolor & MEER,

Sole Liensed Manufacturers of the

cares of camering, Utah and Arizona.

Best Balanced Pul sy in the World Medart Patent Wrought Rim Pulley

SHAFTING, HANGERS AND APPURTENANCES

Nos. 129 & 121 Fremont Street,



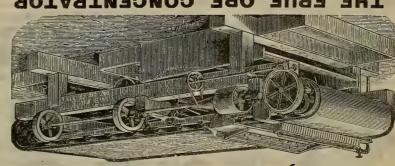
'E 'O 'A (00'SZS) FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The wear and are make tests at 320 Fremont

DERE SIRE: —Having bested three of your Fure Annues in a compositive cital with other similar machine (Triumpn), we have satisfied ourselves of the superiority of your Vanners, as is evidenced by the fact of our havin ordered twenty more of your machines for immediate delivery. Yours truly,

Protected d by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; Febri ary 20, 1888; September 18, 1883. Patents applied for. M. B.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 stional Frues and more stamps have been purchased.

Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,



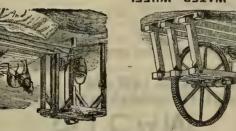
OR VANNING MACHINE. CONCENTRATOR OBE FRUE

### RIX & FIRTH, 225 and 227 First St., San Francisco. and WATER POWER MACHINERY COMPRESSED



NATIONAL ROCK DRILL.

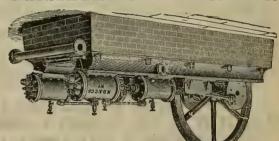
WINEBS, HOBSE MHIW



WHEEL, KNICHT'S WATER



Over 300 in use. All estimates guar-anteed, Serd for Circular.



NATIONAL AIR COMPRESSORS. MILLS, PUMPING AND HOISTING.

SINGLE OR DUPLEX, STEAM OR BELT POWER.

# JOSHUA HENDY MACHINE WORKS,

(INCORPORATED SEPTEMBER 29, 1882.)

San Francisco, Cal.

All wrongth from Nogears, nobreakage.
One horse will easily bandle rook or wheer to a depth 200 Sold on this Coast. Has lear will early entire entistation to the prospector.
Price, complete, \$200. 150 sold on this Coast.

Drill.

Mos. 39 to 51 Fremont Street, -

OF EVERY VARIETY. NEW and Dealers in SECOND-HAND BOILERS, ENGINES and MACHINERY

Stationary, Portable, and Hoisting

ENCINES **Sud Boilers**.

, Shafting,



SPECIAL AUTOMATIC EUGINES. [Menufactured]by the Cummer Engine Co., of Cleveland, Ohlo.]

**OIF2** 

CENTRIFUGAL PUMPS, Steam Pumps of all Makes,

WINING BOWES.

BLOWERS AND EXHAUST FANS.

LEATHER and RUBBER

LUBRICATING COMPOUNDS BELTING

OF THE BEST MAKES.

PIPE and PIPE FITTINGS.

Brass Goods

FILLINGS.

Ore Feeders, . Concentrators, Automatic chinery, Hydraulic Gravel Elevators, Hydraulic Giants, "Triumph" Ore Hydraulic Mining, Quartz, and Saw-Mill Ma-

## 'saxog Pulleys,

Hangera,

MACHINERY, MOOD MOEKING

SHINGFE MIFTS' Efc. PLANERS, SHAPERS, BAND SAWS, STICKERS,

Single and Double Circular Saw-Mills.

AGENTS FOR THE SALE OF

"Cummer" Engines, from Oleveland, Obio, Porter Manufacturing Co.'s Engines and Bollers.

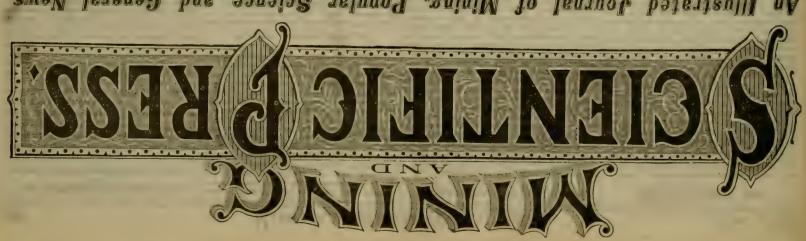
"Beggs & Clerker Rotery Fressure Blowers."
"Maketh Rotery Fressure Blowers."
"Wilbrehem" Rotery Fiston Fumps.
The Volker & Felthousen M'f's Co.'s

The Volker & Felthousen M'f's Co.'s

Buffalo Duplex Steam Fumps.

P. Bisisell & Co.'s Machinists' Tools

F. Bisiselli & Co.'s Machinists' Tools Upright Engines and Bollers Connected.



VOLUME LV Islustrated Journal of Mining, Popular Science snd General News.

SAN FRANCISCO, SATURDAY, OCTOBER 8, 1887.

The Power of the Fature.

scanty store of good oal, the most important use of that fuel being in this age of manufact-uring sotivities the creation of seam for driv-uring sotivities the creation of nuo 101 guitasaegmoo brawot rat og bluow where it could be made easily and economically, it and machinery, it the propulsion of machinery, it California a great manufacturing country. Onlid this power be stranged to points States, and if utilized only in part would make be generated here may be estimated by the hundreds of thousands. It would be ample to drive all the machinery in the New England tries of this State. The horse-power that could realized, as is altogether probable, there is no calculating the effect it will have on the indused of emos flada anxioirteele edt to ancitatoeq producing power of these streams ranging along the Sierra for more than 400 miles I I the exe what is going to some of the vast motivethen through the use of electric motors restore power for some distance by means of wires, and evitom yevnoo ot eldissoq banol need and ti tadt placed well away from the water. But now ere sgaiblind seelnn wohnevo of tilidail si streams ran in canyons, where there is very lite-tle level space near the water, and where there being utilized in very few places. Many of our In another column the subject of California rivers is discussed. The immense water power supplied by these rivers mainly runs to waste,

and steam engine. There is no 'problem shout it. It is as practical as running machinery ults of cosl, steam and power with boiler say the results can be figured the same as the yield a certain percentage of the power origi-nated in the dynamo by the water-wheel. They electric motor or engine which will in turn it by means of wires to a suitably constructed tricity being thus generated, they can convey give to a dynamo of apecified size. The elec-Liw leadw sint snoitulover ynsm wod work will produce under certain conditions. They When the electricians are saked as to the possibilities in this direction and their ability .etst8 gainim bas larutluo ing purposes. All that is needed is a cheap motive-power to give California the same pre-eminence as that she already enjoys as an agri-

For the mining and manufacturing interests the dynamo can be rotated the force generated can be conveyed to a distance and utilized. by an engine, or cable cars by moving cable, If no water-power is available, steam-power can be applied to the dynamo, but as long as to cerry out the plane, they assert that it is in no sense a problematical affair. They know how much power a water-wheel of given size

in this way so that it can be conveyed to any desired points within reasonable distance. pereilitu ed lliw smaerts has srevir ruo to rewoq this State this is a most important thing, so this water-

be recoined into United States money. DURING the month of October the coins to be doumilted at the United States Mint will be douniltees. Meanly \$500,-000 base been received in English soversigns, to make the contract of the con

duction on freight saked amounts to the sum ference between what they now pay and the re-THE Alice Mining Co. of Butte, Montana, uses over 300 tons of salt a month, and the dif-

> conveyed that jets are made to play on the emptying it into a hopper, the dredged mate- deposited in the river. Water for washing pur-rial goes through a revolving sereen, and is poses is litted by a centrifugal pump, and is so

The dredge is 66 feet long, built of iron, have. The riffles in these boxes are made of ing two protections, one at each side, extending bart, three-eighths of the hull and about 2 feet 6 placed about three-eighths of an inch apart, ings in another. The dredge is 66 feet long, built of iron, havrial goes through a revolving of another weahed on board, the large stones passing betorn of gold dredger in use in the rivers of hind the dredge in one place, and the fine tail-

0 2 4 6 8 10 12 14 16 16 20 inches clear from the side, so that the total having under them, on the bottom of the boxes,

MACHINE FOR DREDGING GOLD IN RIVERS.

gravel, and carrying the gold into the riffle-

screens, thereby washing the stones and coarse

width of the ball and pontoons is 26 feet. On the deek of the dredge, framing is erected to carry the dredging shaft, hoppers and washing apparatus. There are two sets of buckets and the dredge are the set of moint and redging ladders, one on each side, which work the dredge at an inclination from the outside dredging ladders, one on each side, which work

0 8 4 0 8 30 15 14 16 18 30 0 8 4 0 8 30 15 14 16 18 30 HIHIM

PLAN OF DREDGING, WASHING AND SLUIGING MACHINERY.

Each chain has its own drum, which can be connected or thrown out of gear as desired. These are all under the control of one man. the dredging ladders, as well as works the mooring chains, of which there are five in num-ber viz., three at the bow and two at the stern. and 18 in. stroke, working under the presenre of 60 lbs, to the square inch. A powerful double cylinder steam winch lifts and lowers ders of 12 in, and 22 in, diameter respectively, inverted compound steam-engine, having cylinwhole of the machinery is worked by a vertical into the river at the stern of the dredge. The in revolving sereens join on to another in-fairestern besinds edt seirres deidw eldet benilo

and when it is absolutely necessary for repairs. Abrough the end of the river, and into a shoot at the stern of the dredge, and are 600 fine in gold and was worth about \$27,000. st Mayendorf. It came from the Jay Gould in the United States Assay Office at Helens, Montana, was handled September 27th by Melt-THE second largest bar of bullion ever melted

oelow the level of the water.

The dredged material falls into a shoot which be worked separately or together, as required. The buckets are capable of lifting 150 tons of stuff per hour, dredging to a depth of 25 feet between the hull and pontoons. Each set can toward the center, where the tables from each

All the fine stuff passes through the perfogetting away before they are properly washed. all round the cylinder to prevent the stones pieces of angle iron are riveted here and there toward the stern of the dredge of 14 inohes to the floot. On the inside of this cylinder short This revolving cylinder has a dip or inclination and perforated with holes one inch in diameter. carries it into a revolving cylinder, 4 feet in di-ameter and 6 feet long, made of boiler-plate

away clear to the stern of the dredge. The large stones and coarse gravel that come through the end of the revolving cylinder pass the gold is collected, and the tailings are carried rated holes in the cylinder, and falls on to in-clined sereens, thence into riffle-boxes, where

> required to form a new channel atterly pre-cludes the attempt. The Clutha river, when treasures of its channel, but the vast outlay made to turn the river, and so lay bare the scores of miles and large quantities of gold have been proposals of the river have been worked for ories up to the present time the banks and river. From the early days of the gold discov-

onld not be panned out from the bed

oult to find any portion where a fair prospect

gle reach of the river in which gold has not been found, and to this day it would be diffi-

Fraser, Mannherikia, Teviot, Taspeka, Waita-huns and Pomahaka rivers, and also for many other considerable atreams. There is not a sin-

shed and affords an outlet for the Kawarau,

reaches the sea, near Kaitangata, a distance of

Lake Wanaka, whence the river issues, until it

publication. The Clutha is undoubtedly one of the richest gold-producing streams in the world. From

ing Company, Clatha, near Alexandra. We take the outs and description from the Hand-Book of New Zealand mines, a Government

baving been given two weeks since. This ma-obinery for dredging, washing and sluicing was made in Danedin for the Danedin Gold Dredg-

New Zealand, a description of another one

Dredging for Gold in Rivers.

appears to be very confident that large yields will result from the operations. In his last annual report Mr. H. A. Gordon, Inspecting Engineer, furnished the following particulars in reforence to one of the dredges, cuts of the province to one of the dredges, cuts of viver near Alexandra South with improved by-dranlic appliances, and Mr. Gibson, an old Duneton miner who represents the company, snoess and hundreds of men might be profits-bly employed. A company has been recently formed in London with a view of working the ferent parts of the river with every prospect of the interstices of the rocky bottom, a large number of dredges could then be placed in difat its lowest, was found to be larger than the that the Nores, was found to the Tay, 9 times that of the Boyne, and 16 times that of the Themes. Several dredges have been placed on the ricerory results. It some efficacious with satisfactory results. It some efficacious method could be found for taking the gold from the interstices of the rocky bottom, a larve

which are shown herewith.

work day and night, stopping only on Sundays, and when it is absolutely necessary for repairs. economize labor. There are three men on each shift, and the dredge is kept continually at ner in which everything is placed so as to facturers of the dredge for the ingenious manwashed on board. Credit is due to the manu: been employed in gold-mining in the colony;
and, from what I could learn, has been sucsesful in obtaining sufficient gold to pay the
proprietors for their outlay. Not only is the
dredged material litted, but the whole of it is deed, this dredge is the most complete one (al-though far from being perfect) that has yet auriferous drift from the beds of rivers. In constructed by Messra. Kincaid and McQueen of Dunedin, and is well adapted for excavating bed of the river for about four years. a large double-action steam-dredge at work, which has now been employed in dredging the ai erent arbasas Avoda esasteib troda A

#### The Trinity Gravel Bed.

The Trinity Gravel Bed,

Though no great excitement has followed distered has been much quiet search and numerthere has been much quiet search and numerposted that this up-raised triver-bed can be
traced from Gold Bluff clear to the Wereverlile
basin, and at most any point along the route
beain, and at most any point along the route
requirement in working these locations, and
from the fact that most of them lie from 600 to
requirement in working the most of them lie from 600 to
from the fact that most of them lie from 600 to
arrived bear of the receipt of conscions, and
from the fact that most of them lie from 600 to
serily follows that in the majority of cases it
will require long and expensive disches to work
sairly follows that in the ensists of large capitalists. One
sairly follows that in the construction of at the hands of large capitalists. One
fact in this connection which gives enhanced
from, which prevents operation of so many
value to the discovery is, that the debrie queen
form, which prevents operation of so many
all require and are not one from any
forcess, can never come into conflict with ownbrook being rapid streams with few alluvial botforms to be ruined by tailings.

A gentleman from Arcats who had Deen on
the ground when the first excitement occurred
being rapid streams with few alluvial botteers in this region, the first excitement occurred
being the from Arcats who had been on
the ground when the first excitement occurred
the ground when the mess last week, and again
strated for the mines in the interest of six other
Arcats people.
Arcats winter an old miner with a 'trocker,
and sugain treats winter an old miner with a 'trocker,
and sugain the streat winter and week, and

Access people.
Last winter an old miner with a "troker,"
Last winter an old miner with a "troker,"
trusting to snow water to work with, made an
average of \$2.50 per day in the vicinity of Willow creek,
One of the pertners in the Poorman mine at
Willow creek returned from San Francisco last
week with the gratifying hidrormation that he
had bonded the mine for \$90,000 to mining
and the ponded the mine for \$90,000 to mining
that he capitalists in that city.—Humboldt Mail.

#### Arroyo Seco Gravel Mine.

his skill making and mine, four miles north of lone, his skill making additions and improvements to be a stready splendid plant and machinery for provement is a turbine wheel, the invention of Sutter Oreek. The latter has just completed the work of putting in this new wheel. It is designed to make the peculiar conditions existing at the design of putting in this new wheel. It is designed to make the peculiar conditions existing at the designed form of the content of is still making additions and improvements to this prominent mine, four miles north of lone, H. L. Lambling, the enterprising manager of

Reader extent than ever before. The San Jose greater extent than ever before. The San Jose quarries have been drawn upon for hundreds of prons of the yellow variety, while the dark brons of the yellow variety, while the dark quarries is also coming into general use. The gouthern Facific Company is about to open a new quarry near Winters, having built a spur track to the neighborhood of the deposit. Samwere lately sent to W. A. Bissell of the Atlanguer at the description of the Atlanguer Lieby sent to Mr. Bissell of the Atlanguer at the word lately sent to Mr. Bissell's office in the Pheisn building, and are attracting much atter the the more manual problems.

BHITEUILDING timber is very scarce in the market, and is held at unusually high figures. Builders have to send orders far in advance so as to be able to carry out their contracts. The as to be able to carry out their contracts. The large serew steamen now on the stocks is being constructed of borrowed timber, it being present. Owing to the scarcity and high price of Oregon pine, deather in a high price of Oregon in great the material is splendid, the timper to be be being straight as an arrow and not a knot in it. The raw material enters here of duty.

A MOVEMENT is on foot to build a drydock at San. Pedro. This is the most important anter prise broached for a long time. A number of Ban Tranoisco capitalists have formed a compact, Colonel Von Bohmids, was instruments in starting the enterprise, and it is to be modeled after the Hunter's Point Dock at San Tranoisco. The dock is to be 1200 feet long, and one cost will be \$300,000.

Julian and Banner Mining Districts.

A correspondent of the Julian Sentine, and the state of the Julian Sentine, layer layers and beaner mining camps are situated about 60 miles northeast of San Diege (Oity, were discovered in the year 1870, the first excitement being the Others American Desert. They were discovered in the year 1870, the first excitement being the Others Others Deservation of the placer mine, where Julian now seends was found the nine, where Julian now seends was found the mine, where Julian are principally in slate ord, so in most better the discovery of the placer of the pl A correspondent of the Julian Sentinel says:

Banner District.

Chapperal, \$12,000; Warlock, \$15,000; Ella, \$38,000; Anteloep, \$40,000; Marlock, \$58,000; Anteloep, \$40,000; Mardan, \$28,000; Anteloep, \$40,000; Mardan, \$28,000; Mardan, \$280,000; Marden Treaenre, \$30,000; Hidden Treaenre, \$10,000.

\$60,000; Hidden Treaenre, \$10,000.

There are numerous other locations which three dust from \$200 to \$1500.

All these locations are owned by parties in the camp, and some of them are kept constantly these locations are owned by parties in the camp, and some of the finesty mines in The Stonewall is one of the finest mines will be worked for 50 yr. sc. The Stonewall is one of the finesty marked in the \$1500 to \$1500

California books it was not on the content of the company of the State.

The Anacouna.—The Anaconda of the content of detake of early and state.

The Anacouna.—The Anaconda of detake of early the senal topper over the largest and detake to early topper over the largest and detake to early topper over the largest and detake to early topper over the largest and the states of the same of th

SELEY'S SMELTING WORKS and the town of Valone, near Vallejo Junotion, bear evidence of Valone, near Vallejo Junotion, bear evidence of very lively times. The smelting works employ in the neighborhood of 350 men and in some of the departments run a night shift. This is the the departments run a night shift. This is the the departments run a night shift. This is the the departments run a night shift is is the department's run of vorsied in San Francisco for many years up to two years ago, when they were removed to Vallejo Junction, where they erected the present works, employing a larger mumber of men.

There is no other to supple to the state of THERE is in Grass Valley township, Nevada

> merely manual labor, was threatened with inevitable ruin by the rapid development of cotton-spinning machinery. It was, however,
> baving declared war with England, saw himself
> having declared war with England, saw himself
> obliged to conduct the struggle upon the field
> of national industry. The strempted competition in the domain of the cotton industry had
> failed, insamuoh as the blockade of the ports of
> failed, insamuoh as the blockade of the ports of
> failed, incamuoh as the Englain, inpueded France
> in importing the raw material might be had
> asy then to counteract this by promoting the
> fax industry, as the raw material might be had
> noon the spot, and so to say, at hand. Mapoleon immediately comprehended the matter,
> and on May 12, 1810, he signed the famous decree which
> cree which Promised a Million of Franca

Aromshed a Millon of Franca machine for spinning dax. The morning of the beat machine for spinning dax. The morning of machine for spinning dax. The morning of the day on which he haven the factore reached Lourmain, the street of dirard, while breakfasting with his spinning day the spinning day the spinning machine for the spinning or patients of dirard, while be defined a procession of day of the spinning or respectively and the strictle in the official journal, "That same evening the young engineer for the factor of the spinning or reappearing about his spinning or reappearing the factor. The spinning or reappearing the factor, and the factor of the factor of the spinning or reappearing which he felt of obtaining that magnificent remained the factor of the factor, and the factor of the f

He Deduced Two Conclusions

He Deduced Two Conclusions of the standard standards and the file filaments of flax. From these considerations which still constitute the foundation of the flax eyelled flax passes and the area flats was that a flax sould be drawn out ribbon of filaments of flax could be drawn out by two pairs of drawing cylinders, between two pairs of drawing cylinders, between the which it is supported by careful combs placed upon an endless movable base and destined at the same time to maintain the parallelism of the flaments of the flax to the language of the flax to the flat of the ribbon. The second conclusion, which permits the drawing of the flax to the late of the flax to the f

The conditions of the superior of superior of the superior of

The Mechanical Spinning of Flax.

sewelt in the Keve Scientifique apon Philippe de Girard, the inventor of flax-spinning by mamber of the control The following from a paper by F. Kuobur-zewski in the Revue Scientifeque upon Philippe de Cirent, the inventor of flax-spinning by ma-Translated for the Parss from the French by M. M. M.

betsrages era ysw sidl al

The pure fibers of the flax called fong brins and the flax called fong brins of the flax called fong brins of the flax called to be flax called to be flax called fong brins of the flax called bong brins of the flax mentore meter yet oncateny and the flax courte brins (short staple), interface, courte brins of spinling, properly specific the flax of throughout, and which constitute the manipulation of the flax o What is Called the Paralleliseur,

What is Oalled the Paralleliseur,
What is Called the Paralleliseur,
What is Called the Paralleliseur,
The purpose of which is to give it a more
ribbons into one, in order to give it a more
uniform bulk throughout its leugth. Thurned
out in this manner from the first eigence, the
ribbons are still further spinne sufficiently drawn
out, they pass to the spindle bench, where they
undergo a new eigency (drawing out) and a last
no cessary combing, after which they are
lightly twisted and rolled up on the
lightly twisted and rolled up on the
lightly twisted and rolled up on the
the product thus obtained then goes
necessary combing, after which they are
lightly twisted and to be a principle.

The product thus obtained then goes
to the spinning, mill. Spinning by tack, has a colle operstion—to draw out and to twist. The flax is
neally put in warm water before transferring
the effect of the spinning to the spinning.
In the form of a ribbon that is also obtained into
thread by the same process as the ribbon of
bure flax. Before dirardy then the form of a ribbon of
thread by the same process as the ribbon of
burd at a ribbon that is also obtained into
combed upon a card, from which it connected the optining to the drawing out flax is lasted only upon the surflored to the fliard's time the contine to the spinning out
thread by the same process as the ribbon of
burd at respect on the same process
of the wing out flax in Ingeland, as in France,
for one that in the form machines for drawing out
the sure.

In Applies Blinding to spin besure of lax,
and the reciprocal parallelism, got entergled
and intermixed to the point of sain becoming
the company of the point of sain becoming
and intermixed to the point of sain becoming
the reciprocal parallelism, got enterged
and intermixed to the point of sain becoming
the company of the sain becoming
the reciprocal sain processing the sain pecuning
and intermixed to the point of sain becoming
the reciprocal and processing the sain pecuning
the sain pecuning of the sain becoming

steam locomotive who rode on the first steam locomotive which was ever put upon a steam locomotive which was ever put upon tailined fract in America. The writer of this itsm and editor of this paper was present and itsm and editor of this paper was present income the first time it ever turned a whose on an iron rail, only 56 years ago. And who can now calter the extent and commercial value of our railroads? They have revolutionized the most merce of the world, and become one of the most essential adjuncts of oritisation—all in a little over 50 years.

### Superfority of American Mechanics.

The following is an extract from an article by Prof. Dieffenbach, in illustration of what he acknowledges to be a fact—state American acknowledges to be a fact—state American acknowledges to be a fact—state from extract in thrope a reliance, the former show in a very short fame their superiority. It is a manly confession of what is very generally known by every imperties the influence of North America uspring still in the protection of North America who he had not of the whole domain of the head of North America who he had not of the whole domain of the head of North America of the still in the whole domain of the head of North America formation of the still is still a still in the still in th

American workman is able to accomplish by American workman is able to accomplish a manneans of these tools may be seen by an example.

The writer of this article spent a portion of 1878 and 1879 in Leipzig, where he became acquainteed writh a manufacturer of books and quainteed with a manufacturer of conservatory. He said he was looking for work in order to pay his son's expenses, and he writhed to have a decarted to the son, who has a said to conservatory. He said he was looking for work in order to pay his son's expenses, and he work in order to pay his son's expenses, and he work in order to pay his son's expenses, and he work in order to pay his son's expenses, and he work in order to pay his son's expenses, and he artended to his work to the last stroke of the attended to his work to the last stroke of the standed to his work to the last stroke of the bad botshined a man fully equal to the German hands in thoroughness and skill, and order the control as any bis American tools. Wages being paid by the his senies of the man earned more than enough to support himself and his son."

mense butte or mount and a kak kinden in Mariam mense butte or mound of iron ore, should be to to the contraint of the contra IEON IN SAN BERNARDINO COUNTY. - An

home.

TROM VS. TIN CLAD SHUTTERS,—Much dity versity of opinion exists as to the utility versity of opinion exists as to the utility of inon shutters. It is unquestionably true that they are not only undestrable, but stances are not only undestrable, but positively dangerous under certain circumsences. Almost every one has wichessed fires get inside the fund have be had a facroe struggle to get inside the building, and has wished the tron have for there to prevent the easy butters were not hard. But certainly every one, to make good spiled up mear the winding which in Hammon's large of the building close by, if the suntfacers in the not would have gone down in a fire, destroying some building close by, if the suntfacers had not been called to the practical value. Attention has been called to the practical value of some abutters in use in Louisville, Ky. They are made of wood covered with tim, and experience shows that they treat the from with out admirably, while in case of fire inside the freemen can chop through them very readily.

I some are all they they they they passing out admirably, while in case of the inside the freemen can chop through them very readily.

pletion of the oraciple the water jacket will be granted to build a new wharf, the construction placed in position, completing the furnace.

Growth or the Rankon Interests in about \$100,000, and when completed will be marvelous growth of the railroad interests in about \$100,000, and when completed will be that this country is well illustrated by the fact that

Labor-Saving Machinery.

the second point of the presence are a second to the second of the secon in the various productive industries has always been, more or less, opposed by employes, under The introduction of labor-saving machinery

him of the means of support.

CRYOLITE IN GREENLAND.—But the days of the noble old clippers are gone, and I went to the noble old clippers are gone, and I went to trade with Greenland. He and a business associate over the success of the success o

Portrant Deprivation of the country.—

PORTLAND REDUCTION WOERS.—The work of erecting the 40-ton smelter is progressing to electing the 40-ton smelter is progressing the fact in the first of the first the next send the country of the first in the first in the completed and will be covered over within the smokestack, 15 feet in hight, is completed and will be surmounted by an iron stack 35 feet, is about half feet in hight and 44 inches in diameter, now being our condenser by means of a sheet iron flue 31 feet in length and 44 inches in chart chamber, 10 by 24 feet, is about half from the next of constructed by Trenkman & Wolff. The next fore chart of the forming the bettem of this condition of the charmer, rest four cast-non solumns eight feet in conner, rest four cast-non solumns eight feet in the chart of the cha

Lamber Manufacture in China,

Speaking of Chinese sawyers and the apparantly inadequate observer of their tools, a

opesuing of chineses sawyers and title apparation of the special process of the English Mcchanic says:

At Dell, Sametra, where Chineses labor sad a locky accordent of the English Mcchanic says:

Dutch those tobacco plantations whose satchments ing profits are the envy of the Far. East, saw, and cart them at a fearful expecse satchments and cart them at a fearful expense through the Mcchanic says of the environments and stronger of, so a gang miles of mad is not to be thought of, so a gang miles of mad is not to be thought of, so a gang of the environments of environments of environments of the environments of environm dent of the English Mechanic says:

makes wild work in English bands, bowever, in the seady for use, and roomstock has makes wild work in English hands.

The new Chollar mill on the Comstock has the mill to put up 20 more. There are 20 large pans wild work in the observes are nearly coady for use, and room is left in the abserves are nearly completed. The Pellings. The foundation and stone-walls upon which to put to the sheaves are nearly completed. The Pellings to make the conduct was a conduct a conduct was a conduct was

The growth of the countries of the control was a first practical for a fear achoners makes this branch of shipbuilding very active. Alexander Hay, proprietor of the Sixbn-street ship. Anoper & Co., wholesele lumber merchants of this oity, for building two sister steam achooners, foot beam and 10 feet hold. The vessels will be very each to be 158 feet in length with a 35-posity of 400,000 feet of lumber each. Work will be commenced upon them immediately, will be commenced upon them immediately, indicate their models, designed by Mr. Hay, indicate their their models, designed by Mr. Hay, indicate their their models, designed by Mr. Hay, indicate their models and manufacture.

The Sheep Mountain Country.

tracked considerable attention during the past team on the considerable attention during the past season, promises to become one of the Territory.

Coming to its present isolation, it has been impossible to secure anything like a tangible or present season's work until the present season's work until the present past of the past isolation and the present season's work until the present has been accurred from parties direct from the new camp. The first discovery of mineral-base made during the campaign of Ool, Bernard against a band of vagabond indicate known as the flood being the mountain sheep. Manuel Fontas was with the mountain sheep. Manuel Fontas was with the mountain sheep. Manuel Fontas was with the decoted the presence of precious metal existing the command at the time, and with him came from mountain sheep. Manuel Fontas was with the discoved the presence of precious metal existing the sheep. Manuel Fontas was with the amountain sheep. Manuel Fontas was with the decoted the presence of precious metal existing the sheep. Manuel Fontas was with the simple of the presence of precious metal existing the dame. It has the first and line and land to a first and lack floods. Both the manuel as everal others whose names now scoape the memory, Here was a mean and lack Dow-stand and several others whose names now sceape the memory. Here was a The Sheep Mountain country, which has at-tracted considerable attention during the past

Hardy Band of Prospectors,

Hardy Hend of Prospectors, tudes a strike, but the vioiseit tudes and strike, but the vioiseit tudes and strike, and is ester tudes and strike of mining life proved to estrable of mining life proved to estrable to them in their latest endeavor, and it has been the latest endeavor, and it is a showing. The difficulties of transportations a showing. The difficulties of transportations is abowing. The difficulties of transportations have always been the one great bar to extensive brighter, the developments made of such brilling a leave the promote are of much properties and a location selected during the past few weeks, and a location selected during the past few weeks, and a location selected to such brilling a secure a location that will always be available, and a point on the pulliding of a town is to secure a location that will always be available, and a point on the pulliding of a town is to a secure a location that will awary of the prime and to make the trails diverge leading to be point of the trails diverge leading to better location for the section. For the section, for the section of a mill of the section for the section of a mill of the section for the decine at an argent section, six in the decine as and aron a plact will become an urgent necessard and the past of the section is and the short time, to meet the demands of the growning district. A wagon road from the condition, when it was a short time, to meet the demands of the month as a short time, and we have a suffern here.

And the ease with which it could be constructed over a natural route commends the
structed over a natural route commends the
project to the layor of all. This road, going
fin close proximity to the Buckskin mine and
by the new out-off, avoiding nearly all the marshy
ground, should be built next spring. One of
the principal owners in the district remarked,
while in Kefchum during the week, that he and
others would prefer to supply their needs at
the principal owners in the district remarked,
while in Kefchum during the week, that he and
and a seed to a supply their needs at
the principal owners are not only that
but also help to build the road. Sheep mountbut also help to build the road. Sheep mountthe contract is a nond
and one only that
the contract of claims
that have been energetically worked during the
present season.

The Seafoam District

The Seatoam District
Lies eight miles from Sheep Mountain, down
the river, and has a number of locations, prominent among them being the White Goat, Lucky
Priday and Birdie E, all owned by Messra.
Baidwin & Bell, pioneers of the district, who,
with a number of men, have been hard at work
all the season developing their claims, and performed a great amount of Isbor. A shipment
formed a great amount of Isbor. A shipment
formed a great amount of Isbor. A shipment
fore will arrive here in about two weeks from
of oce will arrive here in about two weeks from
these claims. Parties in Bonanca are becoming
greatly interested in the country, and are securing some good properties. At present, Bocuring some good properties her best bishy gotten
apasing for the establishment of a mail route
to and from that point and the Sheep Mountto and from that point and the Sheep Mountstandard.

The Greyhound District

The Greyhound District The Greyhound District States, is miles distant, and already boastes of a number of good claims, the Greyhound, after which the district takes or being the principal one, Assays of ore abow a value all the way from 100 to 20,000 onness in silver, strats of the care abowing black onness in silver, strats of the care broades, all phymeut has been made to Bonsara guvenell shipmeut has been made to board and shipmeut street great Manuel Fontas, Messre, Earley and Dowling, and a seto operating in the district, and all seem well street great mining camp, irvaling the Court d'Alere and other regions now so widely spoken d'Alere and other regions now so widely spoken of.—Metchum (Idaho) Keystone.

EARLWAY building operations are very active in Central California. The extension of the Sacramente and Placerville, a distance of 13 miles, Springs to Placerville, a distance of 13 miles, Will be completed shortly. Then in Yolo, Wall be completed shortly. Then in Yolo, Mapa and Lake counties the Bouthern Pacific is making the fur fly, as it were. The grading forward. One is the road from Winters in forward. One is the road from Winters in the wollines up to Clear Lake is being pushed forward. One is the road from Winters in the wollines out to the form and another at Butt's pass, near of that form and another at Butt's pass, near Pope and Coyote valleys.

at Calico, San Bernardino county.

what further toward the south.

Here, in traveling a linear distance of 450

TWENTY-THREE new houses are being put up miles, we encounter no less than 30 rivers, new people from the East. branches are bringing new areas into the mar-ket, and most of them are being settled up by Portland, All these new railroad lines and ot cosioner I neg mort dguordt vaw edt lis gain State. The great Siekiyon tunnel has been completed, and before long trains will be run-Railroad building is going on all over the

though the prospects are very favorable. ever, to prove what the general results will be, It will take next sesson's work, places the rich gravel deposit is many feet ber of prospect holes have been sunk in the river-bed with very favorable indications. In the Big Bend tunnel, Butte county, and a num-The Feather river has been turned through

referred to elsewhere in the PRESS. vorable reports, too, come from the Yukon placers, Alaska. The details of these finds are ra; and new placers are also announced as hav-ing been discovered in Lower California, FaonoS bas saozitA ai daemeticze emos gaisuso The finding of new placers in the Blue Mountains, as trom Mogales, Arizons, is

### Passing Events.

Machine Works—C. H. Evans. Pleese Mine—D. Boland, dibsonville, Cal. Maints Bachinery—Tstum & Bowse. Delinquant Notice—South Comstock con. S. M. Co.

#### Business Announcements.

dows, 'to insector a retrumentes, Light Towards and dows,'to insector a retrumentes, Light Towards and a retromed to the state of the Haginer, Strenge Motions About Early MiniMud Sulform Haginer, Strenge Motions About Early and Scalet Fover, Early Morning, SaS-38, or Calitornia, Nevada, Attzona, Colorado, Idabo, Morning, Cabitornia, Nevada, Attzona, Colorado, Idabo, Morning, SaS-38, MINIMUG STOOK MARKET.—Sales as the San Francisco Stock Board, Notices of Meetings, Assessing the Cabitornia and Morning More and Morning M

of Gannones, Action of Sinces and Spiders, ASO,

BINGLINEERING, NOTES.—Is Steam the Beet for
FROUTHERING, NOTES.—Is Steam the Beet for
road Spikes; Aerial Merigation; The Harlem Ship
Ogans, The Lave South Orces, ASI.

A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True; Fuel in the Diamond Fields; To
A Remarkable True;

A Remark

can Mechanics, SST, PROGRESS.—First Principles MEOHA MULDAL PROGRESS.—First Principles for Young Mechanics, High Rosed and West; Engine for Young Mechanics, High Rosed; England or Sulbes; To Distinguish Steel from Iron, SSO ance of Chemistry; Solidination by Pressure; Snow Absorption of Shipurous Acid; Dissipating the Science of Chemistry; Solidination by Pressure; Snow Absorption of Shipurous, Acid; Dissipating the Singular Acid; Pressure; Snow Chemistry Steel Spirit Spiri

MIGOELLANGOUS.—The Mechanical Spinning et Histry, this man de Baner Mining Directors, The Gravel Mine. SSG. The Gravel Montain. Country; Lumber Manuschure in Sheep Mountain. Country; Lumber Manuschure in Country; Lumber Manuschure in Mechanica; SSG. Sagarange and Mechanica; SSG.

EDITORIALS.—Dredgivg for Gold in Rivers; The Power of the Future, S.S.C. Pressing Farches; The River System of the Future, S.S.C. Broundry Motes; The Morth Coast, Knight Hydrents, S.S.C. Broundry Motes; The Morth Coast, Knight Hydrents; S.S.C. Broundry Motes; The Motesiang of the State of t

## TABLE OF CONTENTS.

Saturday Morning, Oct. 8, 1887.

DEWEY & CO., PATENT SOLICITORS. SCIENTIFIC PRESS PATENT ACENCY.

Entered at S. F. Post Office as second-class mail matter

Our lakest forms go to press on Thursday evening.

Address Il literary and business correspondence and Drafts for this paper in the name of the firm,

Lowdon Acent—Alferd E. Ann, 63 and 64 New Broad reet, E. C.

Per Line (agarb).

1 week I month. 3 mos. 12 m

Advertising Rate

Torms of Subscription.
Annual Subscriptions will be declined without scal in advance. All arrearages must be paid for at the rate of \$3.50 per manum.

M. B. EWER.....SBNIOR EDITOR. Office, 220 Market St., IV. E. cor. Front St., S. F.

**ВЕМЕХ & СО.**, Рабізаветя.



Coast Range may be said to continue on some which brings us to the southern terminus of both the San Josquin valley and the Sierra Nevada mountains, though a division of the oreeks, of which there are many, being men-tioned: The Cosumnes, Mokelumne, Cals-verse, Stanislaus, Tuolumne, Merced, Bresno, San Josquin, Kings', Tulare, White and Kern, After passing the American we arrive suc-cessively at the following rivers, none of the

ceptions, their early Spanish names, maps as the Rio de los Americanos. Herestter it will be found as we go south that all the rivers encountered retain, with one or two exthe American river, laid down on the Spanish the Feather. Ten miles further on, we cross Bear river, hardly more than a large preek, while 40 miles still further south brings us to stream, being navigable for emall steamers to Maryaville, 30 miles above its mouth. At Maryaville the Ynds, a smaller stream, enters the junction of its main confluents, is a large south fork respectively. The Feather, below nated in all cases the north, the middle and the tem, consists of three main branches, denomi like nearly all the principal rivers in this sys the Rio de los Plumas of the Spaniards. This, Mevada on the east, we arrive at Feather river, and larger ones coming in from the Sierra from the Coast Range on the west and more having crossed a great many streams coming in the east.

Proceeding 80 miles in the same direction,

the name of Pitt river, a large atream having of engine in a group of proken monntains to southeasterly base of Mount Shasts, after run-ning due south 65 miles, falls into the main Sacramento. The latter above this point takes south is McCloud river, which, rising about the therefore, nowhere very precipitons, its aggregate fall is considerable, it being a very long river. The next stream encountered coming Klamath does not have its main sources in the Sierra Merada, but in a series of lakes lying to the west of these mountains. While it is, and empties directly into the ocean. The the State, flows across nearly its entire breadth in California that, rising in the eastern part of Commencing on the north, the first large river met with is the Klamath, the only stream

country along its base, has few running streams
—none of any size—this constituting what may
be termed the srid region of Central California. what moisture is so arrested being precipitated on the westerly side of this range. As a con-sequence, its easterly slope, with a strip of ried inland by the air currents from the ocean more than a small portion of the moisture car some places into three, summits. Being comparatively low, these mountains fail to arrest early its entire length into two, and in irregular chain of mountains, divided through and the Sacramento is the Coast Range, a long,

Lying between the basins of the San Josquin ewollen, when also every water-course in the State is rying great volumes of water in the wet season, Between these principal streams occur many creeks, large and small, some of the larger caror three of which can justly be called rivers. owi medi erom ton temes treams, more than two ic system the water shed of nearly two-thirds of the State is drained. Outside it are only a reach the ocean. By means of this hydrograph the San Joaquin and the Sacramento, which in turn empty their accumulated waters into a succession of pays, through which they finally down, flow into the two great drainage trunks, torm the main streams, which, traversing the footbill region and the broad plains further after a fall of several thousand feet, gather and Sierra Mevada stretching along the eastern bor-der of the State, the tributaries of these rivers, ing with few exceptions their sources in the ticipated the future wants of the State. ment of these streamsnature seems to have anis without an example elsewhere on the face of the grrange. amount of motive-power they farnish or the facilities they afford for irrigation, this system ity and frequency with which they occur, the having such a system of rivers as that of Cali-fornis. Whether regard be had to the regular-

There is not in the world another country The River System of California.

this being apart from the creeks, of which 100 | introduced." California Plants and Flowers, both Native and on "The Attributes and Properties of Certain of the last meeting of the Academy of Sciences was the reading by Dr. H. H. Behr of a paper CALIFORNIA PLANTS.—The principal feature

does not die, except where growth has reached maturity and life has fulfilled its purpose. dry season is our winter when nature rests but instinctively spread out near the anriace. The moisture, whereas in wet countries the roots its existence begins to go down in search of tutionally adapted to this condition of things, this being especially true of plant-life, With us, the tap-root at the very commencement of tracted seasons of drouth, because it is constithrough deep-lying channels. Again, animated creation suffers here but little from these procountries to great depths, and making its escape water howing out comes to the surface at irregular intervals, instead of sinking as in flat of benches or terraces at the base of which the face all through these long, dry seasons is ex-plained in part by the peculiar geological for-mation of our mountain slopes, which consist water should here be so plentiful near the surwells and most other deep sources of supply are so little affected that no such thing as a general dearth of water can occur in this State. That shallow wells fail entirely. But the artesian and all the larger ones reach a low stage. The springs show a diminished flow and some of the Most of the smaller streams, it is true, dry up, winter may have been an exceptionally dry one. no inconvenience, and, of later years, no serious loss, and this, even though the preceding uninterrupted drouth in this State causes here distress and widespread ruin. Six months of Issuevian gaigaird redtasw done to sitaom owt the continent causes much suffering and loss obis oitnata edt no ather weather on the Atlantic side many strange things for California. A month

sapply.

Nature in her wise husbandry has worked Coast Range to the west, thereby insuring to San Francisco and other cities about the best kind, water in any quantity and of the best kind, should they ever have to look to the Sierra for several thousand feet, enough to carry them on the highest divides between the rivers, over the footbills and plains, and even over the they reach the plains have made a descent of this too, having been foreseen, has been arranged for. These mountain streams before where required for consumption and use? But given head sufficient to carry it on to the places

But what good all this water, had it not been as well as for every other needed purwater for driving machinery and water for irridown, where the enowfall was less, were planted with stately forests. And so, this part of California will always have water to drink, sion, the slopes of these mountains further the supply and prolonging the water season. To render still more effective this wise proviguard against intolerable drouth by increasing and tor a long time retain, this anow and thus seeing that this portion of the Pacific Coast would be subjected to a long, dry summer, lift-ed them to such hight that they might receive, perial hights without a purpose. Mature, foreoccurrence of any stringent water famine. These mountains were not raised to such imtral California is forever made safe against the great water (preserves later in the season. In these immense bodies of perpetual anow, Cenfields, the higher peaks of the Sierra serving as -wons lainnered to thethe task a si eredt slowly, not wholly disappearing below the tim-ber line till nearly midsummer. Above that ed by the tall forest growths, this snow melts with altitude from 10 to 40 feet. Being sha fall on these mountains, though greater some winters than others, is always heavy, varying season elsewhere in the State. The snow ing sufficient to insure such result, however dry never fail to afford a large supply of water, the precipitation on the Sierra Mevada always bebe well to notice. In the first place, they There are about these mountain atreams a maper of peculiarities, some of which it may

being nearly equal to that of the Hudson. very great, the flow of some of the larger rivers During the wet season and the early summer, when the snow is melting on the mountains, the volume of water carried by these streams is might perhaps be fairly counted in, the larger forks of the principal streams being included.

of different colors. There is a great deniand tofore called marble is now known to be onyx marble in Glover monntain, but the stone herethe lime company and the other to be known as the Glover Mountain Onyx Company. The fact has been demonstrated that there is no being made for separating the Colton Marble & Lime Company into two companies, one to be SAN ВЕRИАВDIИО ОИТХ. — Аггалуетевта яге

emely scarce. As a consequence, ground that ould pay handsomely lies unworked. Lower California. That country has a number of good placers, but unfortunately water is ex-Rich finds of gold are also reported from

north next spring, for good placers attract min-ers, no matter what the difficulties are in work-Doubtless, however, many more men will go short, and the mosquitoes in summer are as bad as the cold in winter. Of course during the winter months no work at all can be done. very long distance from here. The season is

a si noiger sint tant beredmemer ed taum tI back in the early spring, and the streams com-mence to freeze up about the lat of October. of July 26 ounces. High waters are a draw-On one bar three men rocked out on the 25th richest deposit lay behind bowlders and drifts. another would yield, perhaps, an ounce. would contain nothing but a few colors, while bunches than otherwise. As one miner stated, several shovels of dirt could be taken up which into the gravel banks, on account of encounter-ing half-frozen ground. The gold rather lies in could a miner wash farther back than four feet ery near to running waters, for in no case ing to speak of, but spent their time prospecting, rocked out from \$400 to \$2000 in dust. This gold was mainly taken out of creekbeds with the exception of those who did no washthese diggings this summer. All the miners, and \$32 in value. It is estimated that in the ni stee are of \$100,001\$ to boothood sien ounce. Two nuggets were washed out of \$15 and \$32 in value. It is estimated that in the contract of \$100 000 and a state of \$150 out of \$1 all the way from \$10 to 13 ounces per day per man. It is all very coarse gold, the market price in Juneau of which is about \$17 per Bare worked along the main stream yielded

washing is a prevailing drawback. stream were somewhat explored and found to be rich, but the scarcity of water in them for the small tributaries putting into the main mence about three miles up from the mouth, and are continuous 90 miles up, as far as this summer's explorations extended. Several of miles. The diggings on the Forty-mile comeast is an immense copper belt, 60 miles wide, 000 eat it has been traced over the divide 100 per river. Running from Copper river to the of Mount St. Elias and the headwaters of Coptase ent of bas elivide sast the east liance, having its source in the Alaskan range Yukon river about 100 miles below Fort Rekon this season. This stream empties into the -nY of energ evan of who have gone to Yufor that section, and soon nearly 300 men were on the ground. In fact, Forty-mile oreck was fall by a man named Franklin, and upon his report of the discovery of coarse gold there the miners on Stewart and Salmon rivers pulled out This place was first discovered late last proved quite rich, some miners during this summer having rocked out as high as 13 ounces in a day at the new diggings on Forty-mile that in many places the gravel bars have though the main attention has been given to the placers. The Alaska Free Press declares have more or less gold dust, the result of their season's work, Free gold quartz has been found on the Upper Yukon this season, A number of miners from the Yukon ore region, Alaska, have arrived at Victoria, on their way home for the winter. All of them

tion in that part of the country is that of water sins from all parts of Arizona and Sonora. Thus far no full details of the character of the find have been received. A very important questave been received. gales, and men are going to the Blue mount-A number of prospectors are outfitting at Moworth from \$10 to \$800 have been brought in. get worth \$1200 has been found and others that the new placer diggings in the Blue mount-sins, southeast of that place, are of greater im-portance than at first reported. A large nug-Dispatches from Nogales, Arizona, indicate

New Placer Diggings.

#### American and English Yachta.

tried to recover the cup then won, but without success. This year there was greater interest than ever in the race, but again has the Amer-ican center-board vessel defeated the English tween the two nations in the matter of yaoht construction. Many times have the English Ever since the famous yaobt America, in 1851, outsailed all the English yaobts in their own waters, there has been great rivairy be-

The result has been that the two boats that onliarities of the English rig, and the English bave laced their mainsail to the boom, as we do, instead of trying to flatten the sail by tackles, and the American narrower than previously.

The Americans have adopted some of the peof leeway, a center-board, which is a sort of movable keel. The two types have been modi-fied of late, so that the English yacht is wider and shallower, and carries for the prevention slead keel. The American type is broader The English type of yacht is a cutter, very modification of the extreme types of both ma-tions. It seems each had something to learn from the other, for the yachts built this year are doubtless the factor the world ever saw. The result of all these contests has been a

Britain has been badly outsailed by our fastest the center-board craft. The races have been watched with inverest by the people of both to three, the result proves the superiority of American greatly outsailed its rival in that di-rection, and beat her in the first two races out eat bas brawbaiw of si gailias to test aiam tial difference being that the American aloop Volunteer has a center-board, and the British centrer Thieste has a fixed lead keel. As the met this year as champions for the respective nations were very much slike, the only essen-

their setoniehment at the great enperiority of the American center-board type of yacht. board ones, but repeated trials have proven the contrary. The English designers and yaohtmen who witnessed the recent races confess ere faster and more weatherly than our centeruse is not now permitted in reces in that coun-try. They have always said their keel boats Britain will no doubt now give more attention to center-boards than formerly, although their The designers and shipfindqua branches

ing Company was organized to operate it. cindea 320 sores, ovo or which considers of working gravel from 12 to 116 feet deep, and which
will yield, it is claimed, from four bits to \$\\$7\$.

gross per cubic yard. Within the limits named
are also the Rock Creek and Hawarden placer
claims. The gold has been washed down from
the rich gold mines on the Upper San Mignel.
The location was claimed some six years ago by
Salt Lake men, and the Lone Tree Placer Mining Company was ortenized to coerate it. cludes 920 acres, 600 of which consists of workthe San Miguel river. The Placer is over five miles long by 1000 to 4000 feet wide, and in-Montross Placer Mining Company of St. Louis, Montross Placer Mining Company of St. Louis, the consideration being \$150,000—000-000-000 down and the viscen mining district, Montross erry is in the Vixen mining district, Montross ountry, Colorado, 65 miles from the D. & R. C. railrosd, on the Dolores river, Ioo miles from Onray, and six miles below the mouth of the Montros in the Book of the mouth of the Montros of the mouth of the St. Montros of the Montros of the St. Montros of the S THE Lone Tree placers have been sold to the

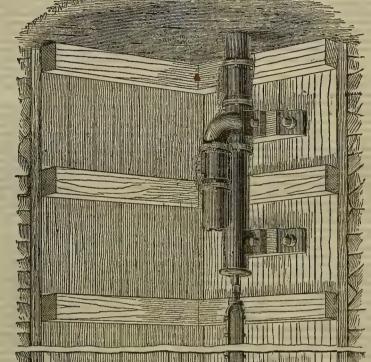
not the most salubrions in the world, and there is always more or less sickness; but Mr. Perkins and his family have escaped any ill effects. He will go to London before returning to California salary of \$20,000 per snaum. The climate is there on Mr. Jennings' arrival. It is under-stood that Mr. Perkins has been receiving a Perkins, long connected with the mines of this State, has been manager of El Callao for the past tour years, but has resigned and will leave the famous producing mines of the world. Mr. he goes as manager of El Callao mine, Jennings has given up the superintendency of the New Almaden quickeilver mines, Sants Olars county, and Col. F. Yon Leicht of this city has been chosen for the position. Mr. Jennings leaves this week for Yenezuels, where Et Oallao Mine, Venezuela, -- Mr. Hennen

month amounted to about \$190,000. A camp that pays that much wages monthly must be far from a " played-out" one. THE payrolls of the Cometock mines for last

where there is a great amount, This can be utilto 100 feet below the mine. This can be utilixed by Knight's bydraulic engine for the low
purposes, by using a large cylinder for the low
presentes. This is connected with a small
pump, and this in turn is connected by pipes to gained in power. Pumpe are made that will pump 1000 (eet high, or more if desired.

Often places are found in mining localities where there is a great amount of water from 50.

The first this engine at the drain tunnel, the pump in the man, and operates it with perfect the drain tunnel, the can readily be obtained, making the By using this engine at the drain tunnel, the can readily be obtained, making the by Knight & Co., for use in connection with this rod run down to a special plunger pump, made drain tunnel. This engine can de bolted to the shaft timbers at the drain tunnel, and a pumpdepth where there is water pressure above the designed for pumping water out of mines to any The out on this page represents the Knight hydraulic pumping engine. This is especially Kolght Aydrsalic Pamping Engine.



KNIGHT HYDRAULIC PUMPING ENGINE.

great cost in the plant. It is olaimed that this hydraulic engine will use of small pipes an advantage, thus saving

engine of this character is working satisfactorily in the Plumas-Eureka mine. It is drawany water wheel and gearing ever made. neat enim a to tue veter water out a mine than

is working along uninterruptedly and requires less attention than a steam or air pump, and the managers of the mine apeak highly in its ing two 18-inch plunger pumps and raising the water 150 feet vertically.

They use short 25 inches of water under a spream of the spream of th

of the pump. The only gain by doing this is the main doing away with the pump-rod. Mothing is praise, the water is exhausted into the discharge pipe water to operate the engine carried down to it in suitable pipes. After operating the engine a great loss of power in the friction of heavy gearing and short single and gearing and special specia delay in setting up the ordinary pump, besides pense of gears, bob and foundation, and a long ing water out of a mine saves the enormous exgreatest amount of the useful effect of the water will be obtained. This method of pump-

Foundry Notes.

this oharacter that cannot now be made on this coast with the combined plant of the Pacific Rolling Mills and the Union Iron Works. to arow on si erees. There is no work of per cent. A piece one inch square bent cold to 8 inches, 18.5 per cent; reduction of area, 17.75 ahow the following results: A tensile strangth of 64,370 pounds per square inoh; sland; dimit, in inoh; slongstin in inoh; slongstin in ever accomplished on this coast. Recent tests prove the steel to be stronger than the best Morway. Mr. Mohle, auparintendent of the Feet Pacific Rollie, informs us that the test who we the following results: A Kennile attentibute. It is one of the most successful pieces of work ceat-steel ram or stem for the craiser Charles-ton now being built at the Union Iron Works. We recently made note of the successful casting at the Pacific Rolling Mills of the great

one of 75-borse power. At Garratt's foundry, 5th and Brannan streets, The resulty a lines mines or lastes doubly. A loo-horse power Wheelock engine and Hazelton boiler plant for the San Diego Electric Railroad Company. A similar plant for the San Jose & Santa Clara Electric Railroad Company. A 200-horse power Hazelton boiler plant for the Selby Smelting Works. A 100-norse power Hazleton for the Starr Mills, and one of Y5-horse power. A 10-stamp gold-mill for the Black Oak Mining Company of Tuolumne county. A tramway for the Reilly & Bliss mines of Sharts county. A stamp gold-mill for Scott's Bar, Siskiyou county. with Duncan concentrators, for the Santisgo Company of United States of Colombia, A 10. Rolling Mills and the Union Iron Works.

The Pacific Iron Works are running a good force and turning out a large amount of missing and other machinery. Among their more recent johemay be mentioned: A 10-stamp of Honduras. A 10-stamp gold-mill, with Duncan concentrators, for the Santa Lucia Company of Honduras. A 20-stamp gold-mill, with Wonduras.

of Locomotive Engineers. We recently described this brake in detail in the Press. this week, the workings of Hanscom's new straight-sir automatic railroad brake were ex-plained to a number of members of the Society

woffice and salesroom at 43 Dey street, New ers and contractors. A material increase in orders is reported since these works opened their for use in this country, where the Clayton air-compressors are prime favorites with the min-Oansda and most of the South American Republica. The great bulk of sales are, however, Air Compressor Works of Brooklyn, N. .Y., whose celebrated machines are now in use in Russis, Australia, West Indies, Spain, Mexico, oluded in this month's shipments of the Clayton ni si nagat rot rossergmon-ria xelqub A

The North Coast,

ling ores will be of vast benefit to the mining a bonna of \$25,000 to new amelting works. The establishment of these two works for hand. reduction works, where ores from the surround-ing interior regions may be worked. This week Vancouver, British Columbis, has voted improving. Portland, Oregon, now has large effairs connected with the mining interests are In the north of San Francisco along the coast,

San Francisco along the coast have never been held in high estimation, but now they are proving their worth, and will come into still further motice as they are developed. now attracting attention, and of which we speak more fully elsewhere, bid fair to be regions to the north of or deposits. Then the placers of the Yukon, quertz, is paying handeomely. Others close by are desired the considered being are doing well also. Milling facilities are desired permanent ones, as mines go. Other islands belonging to the Territory promise similar veins or defended. Douglas Island mine, a mountain of low grade ritory of Alseks the mines that have been opened are yielding well and others are being prospected which promise well. The great interests of the respective regions.

But sway further north in the American Ter-

senting the petition. Then the employes struck on Monday and the foreman was discharged, whereupon the men returned to work.

near Gress Valley, protested against their fore-man, and petitioned for his removal. He promptly discharged two men who led in pre-

THE employes of the Derbec gravel mine,

section of obemistry, we quote and condense scholous of obemistry, we quote and condense scholous, and the series of the series At the late meeting of the British Association for the Advancement of Chemistry, its president, St. H. Mescoe, devoked his insagnment address chiefly to a review of the progress which has been made during the last 50 years in the science of chemistry. We quote and condense science of chemistry.

The Size of Atoms.

Progress in the Science of Chemistry,

to said the most we can hope to attilize of the most we can hope to attilize of the coate, Making Hydre as nothing without to 100 a sacting something in payment.

A pound of water is the same as a pound of a falling through space it will exert just as much force as any other pound weight is into expable of doing, and no more. We turn water the same the case of the power that combined form water, apart, and use the same in the case of the capable of doing, and is the capable of doing, and is the capable of the same in the capable of the capable o

To Distribute Steel from Iron.—A German paper gives the following test to disting the paper gives the following test to distinct four on the object to be tested a drop of mitric acid of 1.2 sp. gr.; let it act for one minute, then rinse with water. On iron the soid will cause a whitish water, on steel a black stain.

CLOSING THE EADS OF WROUGHT-METAL TREES,—A new method of closing the ends of wronght-metal tubes consists in heating the end of a tube to a proper working nest, then conical or concave dies till the end is suitably contracted, then reheating the end, and sliding the tube upon a mandrel having a rounded selicing the tube upon a mandrel having a rounded into a hemispherical end, and by means of a suitable dies swaging and welding the tube end into a hemispherical end, and by means of a suitable dies swaging and welding the tube end into a founded form without seam or joint. John P. Kennedy of M. X. is the patentee.

EVIDENCE OF INCREASING TRAFFIC.—The locomotive industrial works of the United States
have been very busy lately in the production
of new motors for these increasing treaffic of our
own and foreign roads. This is shown very
foreigly in the report of the last six months
production of the Baldwin Locomotive Works,
Philadelphis, With a labor force of 2000 men,
Philadelphis, With a labor force of 2000 men,
in is comotives, nearly two per day hand, end
it is expected that the output for the year
it is expected that the output for the year
will reach the grand total of 500.

UNAECESSARY STRENGTH IN STEEL, — Mr. Wrightson, a prominent English ironmaster, Wrightson, a prominent English ironmaster, and deciares that he are never really called into play, steel which are never really called into play, and get a steel which will bend their minds to the quare inch, they would, he or 28 tons to the equare inch, they would, as believes, he really getting a material which would be of very much greater value than one would be of very much greater value than one many engineers specifications in in many engineers' specifications to nime in the contractions of the

Business of preserved and the friction is a consecuence of preserve, it is reasonable to presume that, other things being equal, sugine friction varies directly with the increase of pressure or varies directly with the increase of pressure on rate of capacity with the increase in the rate of expansion, and within moderate limits of change is not materially affacted by variables in piston speed. Experiments which have been made tend toward the same conclusions, but more data must be furnished before the except and the change in ordinates of working conditions, can be formulated and working conditions, as he formulated and the capacity of the change in stuffing-boxes and pistons in cylinates of steads and pistons in cylinates of such as a stuffing-boxes and pistons in cylinated by the case of steam-packed pistons.

MECHANIGAL PROGRESS.

First Principles for Young Mechanics.

Electricity-What is It?-Its Possible Future.

A well-grounded knowledge of the great law or principle of concervation of energy should be founded knowledge of the great law or principle of concervation of energy should be so taught with the multiplication table. It can be so taught if the teachers themselves are certain that there is in the universe only so much once than already existed. With a clear uncore than already existed matched and few a

HIGH SPEED AND WEAR.—It is charged against the blanks of the bight speed engine that it wests on the states that it wests on the sense usus separate This is true, but not in the sense usus speed engine. It sets itself to pieces "is not true, when the engine is properly designed and true, when the engine is properly designed and true at the speed it was intended it should be repeat the speed engine. The high-speed engine on the properly designed high-speed engine are actually less then those upon a low-speed engine. The high-speed engine wears out in one-half, one-third or one quarter cive more rubbing and for no other reason. The guides that have a cross-head moving back send forth 200, 300 or 400 times a minute will wear out in one-half, one-third or one quarter went back and forth 100 times a minute. The word fact of the dylinder, the connecting-road same is true of the dylinder, the connecting-road passes, the main bearing, and, in fact, every place on the engine where we went because of the engine where we went the engine where wear comes.—Wood passes, the main bearing, and, in fact, every place on the engine where wear comes,—Wood and Iron.

We hear or read almost daily of the wonders of science, and what is to be accomplished by electricity. "It is to be the great power of the future." Is it a power now? We may make it indirectly to drive machinery, we may make the indirectly to drive machinery, we may make use of it to prepel the care on our street roads, but is it a power in the sense that steam is a power, and our factories are power? Let make of this a few moments. We call steam a power, and our factories are driven by yellong a power, or we call water when falling a power, and we drive the machinery in other factories by water wheels. Where we have the it is and it and it is and other to tall it is milling the wind is our power; these and other sources of power may be eatled drived the may be called the wind is our power; these sand other sources of power may be eatled by maker which is our power.

primary of the metal countries and the state of the motor of the metal countries and in the metal countries and the countries and countries and countries and countries and

bam remarks that as to me which cannot be about a consequency of the electron of market that as to me which has not been divided, but rather as one which has not been the divided, and rather as one which has not been the constitution of market have been the scientistic and many minds from olden time strate many minds from olden time strate many cases architectural outcome constitution of market now recognized as different many cases architectural outcome and market now recognized as different many cases architectural outcome. The second market now recognized as different many cases architectural outcome.

The speaker next proceeded to ask and examine a figure of Atoma.

The speaker next proceeded to ask and examine what light the researches of Deltorian atoms have he are successful and the subject of Deltorian about the direction what Delton had regarded as implied the researches and conclusions of Losobmidt that the diameter of an atom of oxygen or nitrogen was only one ten-interteenth part of a centimeter was nitrogen or entired to the part of a centimeter was only one ten-interteenth part of the same. To put it in the part of the same. To put it in the part of the same. To put it in the part of the same. To put it in largine a stoms of an atom of a subject of the carring power we can distinguish only the one-forty thousands part of the example of the part of the part of the stoms of the stoms of the stoms of the stoms of another than the subject of the carring between a heap of small shot and a heap of oricket-balls.

In regard to the divisibility of atoms, Graphen each of the speculative ideas with regard to divided, but rather as one which has not been shown and the defined, not as one which has not been divided. The speculative ideas with regard to divided, but rather as one which has not been the constitution of matter have been the scientific relations of many minds from olden time to the present. ACTION OF SLICA ON GOLD.—Gold will only male at a comperators, as we all know, but what is not generally known, we all know, but what is not generally known, the Jeweleys Journal says, is that if we per cant of silica be added to the gold it can be melted over the flame of a common candle. From the same source the reader may learn that a pretty alloy, said to resemble gold extince and you platinum. The copper and platinum are covered first with borax and then with powdered charcoal and melted, then the since added, and the alloy thus produced is exceedingly malleable and can be drawn into the flacest wire, while it never tarnishes.

ACTION OF SILICA ON GOLD. -Gold will only

DISSIPATING THE SMOKE OF CANNONS.—The discovery, by Mr. Lodge, of the curious effect discovery, by Mr. Lodge, of the curious discovery, by Mr. Lodge, of the curious discovery, by Mr. Lodge, of the curious discovery, by the construction of an apparatus for the smoke derived from the discoverge of the smoke discoverge of ordnance of every kind. Mr. Lorrein procommunication with appropriate conductors as maploy an electrostatic generator in communication with appropriate conductors as a conductors, he prefers a light wire lattice provided with points that permit of obtaining vided with points that the sure disconductors, he prefers a light wire lattice provided with points that the sure disconductors. The generator rises he proposes is Wimshurst's, this being less silest the proposes is Wimshurst's, this being less may be placed anywhere, and be actuated by any being energy any permit of motive power desired.

Snow AESORPHON OF SULFHUROUS ACID.—
The results of the examination of snow taken from different places in Aunich and its neighborhood by Mr. Sendthen, says the Pharmar. Self of the could seem to interest Journood by Mr. Sendthen, has a considerable centical Journal (London), would seem to interest Journal London), would seem to dieste not only that snow has a considerable faculty for absorbing suppurous acid trom the atmosphere, but that the absorption goes on cortained that, on one day when now [ell, sulpraviously for some day when now [ell, sulpraviously for some day when new [ell, sulpravious acids were present in it in fairly equal proportions, but on the second day almost all the vicinity of chimneys and proportions, but on the second day almost all proportions, one day when so certained that, on one day wince to sulpravious and sulpring vesting greater. This great absorption would of course be sulprintous and sulprints coid is considered of sulprints the destructive influence of snow upon marble structive influence of snow upon marble strainty.

Monther Carron by Ressure.—According to Maginecaring, M. Amagat has aucoesded in solidating the arious liquids by compressing them in their grantous in the corpus and steel. He has also photographed the crystalls after orystallization by means of a ray of electric light traversing the interior of the vossel by glass comes serving as panes. The stages of orystallization can be about the their context. The stages of orystallization can be and it is seen that the process varies with the the edge of the luminon the process of the decoration of the decoration of the first country of the decoration of the luminons field and grows to the decoration of the luminons field and grows to the becomes obscure, then the dege of the luminons field and grows to the field becomes obscure, the stage stage of the luminons field and grows to the field and the liquid state is reproduced. M. Amagat and the liquid state is reproduced. M. Amagat field the forester at the stage of the luminon or submitted at the stage of the luminon of the liquid state is reproduced. M. Amagat field as a present of 19.5° C. benzine orystallizes with a presente of 20.0° C. benzine orystallizes with a presente of stage of the sure of 20.0° C. benzine orystallizes with a presente of stage of the sure of stages of the sure of sure of the sure of sure of the sur

The results of these investigations and experted on statication.

The results of these investigations and experiments asem to prove that "while the atomic ments seem to prove that "while the atomic or of half the unit, many multiples of the atom approximates so closely to a weight of the atom approximates so closely to a weight of the atom approximates so closely to a unitiple of that of hydrogen that we are concupility to a discendible that we stand why a close approximation some reason mere matter of chance, but that that senon be a mere matter of chance, but that that some reason must exist for them. What that the some reason must exist for them. What that the some reason meter matter of absolute identity exists and why a close approximation and yet something short of absolute identity exists. There that the confident behave been litted, and this occult but tundamental question of atomic philosophy aball maye been brought into the occult all that we been brought into the occult of the confident provided that the confident of the confident provided that the confident of the confident provided that the c

50 years ago were andiscernible are now clearly manifest." terent elementary and stances may possess one such the same ultimate or atomic molecules exacting in different conditions of movement."

The experimental evidence now nester and bestring upon these interesting speculations has within the last 50 years lations has within the last on years of the interest of the intere

SCIENTIFIC PROGRESS.

## USEFUL INFORMATION.

Another Telephone.

Is steam the Best for Power?

The conversion of water into steam absorbs such a large amount of latent heat that many gersons have endeavored to obtain some subsituate which produces a vapor by absorption of less beat. Such attempts to obtain economy of and are not likely to be successful, not on somants of mechanical defect, but because of the inherent physical properties of the vapor produced.

duced from a colored properties of the vapor produced.

The mechanical value of the expansive force of different vapors depends upon the bulks produced from quala bulks of different liquids, and duced from quala bulks of different liquids, and asteomated from the conversion into other liquid, the amount of vapor produced, but the first bulk for bulk, is greater than it is with other bulk for bulk, is greater than it is with other produced, other liquid, the should be norme gain were it oct that for the equal volumes of these vapors; over nearly equal.

There would, therefore, he no economy in using its elements and there are recomenced to the control of the

the countries of Progress.

The Ports bridge from North to South Queens is only one link in the line of Northern travel.

The Ports bridge from North to South Queenstery is the second, and searcely less important that the second, and searcely less important able as the largest bridge in the world. The second will have the distinction of being made second will have the distinction of being made of steel throughout its to the workmen, and the sea throughout its the workmen, and when the largest busing enterprise when completed may be regarded as one of the greatist of the sone of the greatist of the sea one of the greating eatreless, though definition of the sea of the stance of the greating the principal seas of the stance of the greating the seas of the stance of the greating that the principal spans are each ly00 (see, and the principal spans are each of them is 200 (see, and the stance of the stance of the stand the stance of the stance o

AERIAL MAYDANTON.—The problem of aerial navigation is to be attacked by means of a balloon of coloseal arise, which is asid to be 500 feet in diameter, and to weigh \$3,000 goals. Two steam engines of 50-horse power ponder. Two steam engines of 50-horse power and the problem of the property of the problem of the problem

DE LESSETS has projected a grand work, but it ever completed, involve an expenditure of life and treasure only equaled by the Chinese wall or the works of the Pharaohs.

fartne Carine W. A. T. Dook, "The Wisconsin Central orbit of the Asplant of the Managara and the Carine of the Car

The Harlem Ship Canal.—It is now said that all impediments to the construction of the Harlem ship canal have been overcome, and that work will soon commence. It is expected that the grain and lumber trade will be more immediately affected.

A COMPANY with a capital of \$30,000,000 has been incorporated for the construction of an underground railway, connecting Ohicago with derground railway, connecting Ohicago with will prepalally be operated by compressed air or will probably be operated by compressed air or electricity.

MAILEOAD SPIKES.—There are 200,000 miles of takes and it takes bated bates and it takes of relived begs of relived epikes per mile to keep up they are the relice as an annual consumption of 1,000,000 keeps. To this must be added three and a half tone per mile for the 12,000 miles of and a half tone per mile for the 12,000 miles of and a half tone per mile for the 12,000 miles of the relice of a half tone per mile for the 12,000 miles of an annual miles of a half and a half a half

Acceleration of the control of the c

A KENNEKAEL TREE.—"When I was in yesosted to the public, or yesosted to the devised will be tried before it is presented to the day," remarked a Western politician at the St. James, "they showed are such as the St. James, "they canned a weak and the bother day," remarked a Western politician at the St. James, "they canned a gardens. They call it the caryots ureus, and states, in the same perportion as the followers of States. Just in proportion as the followers of States, and in the open lation of States of the United States, in the same proportion does that the more manned and the control of States, in the same proportion does that the beautiful tree, with a minimal state of the control of States, in the same proportion does that the paint of States and search of States and

DEAR SIR:—In your issue of the lith inst. is offered a pamphlet embodying the "Cancer Discreted a pamphlet embodying the "Cancer Discreted a pamphlet embodying the "Cancer Discreted a profession and a professional man I have been much gratified by the course taken by your paper; but the suspicion of "legitimate allow been much gratified by the people greated the people such a professional journals are not read by the people generally. The value of a successful treatment of "cancer would be inestimable, the people generally. The value of search oblige, some a successful treatment of "cancer would be inestimable."

We would assure our correspondents that this oblige,

We would assure our correspondents that this steention of the general public, Several physicians for our different physicians of undoubted estanding, both in this city and Oakland, have quite recently taken it upon the massless, unsolicited, to make personal interest and the steen of undoubted estanding the steen the which has been claimed for the "alleged cure." Physicians in several cases have also so far broken away recently the strict rules of medical etiquethes as to commend patients to the care of Mrs. Dr. Cook, and the treatment in such cases is being that the new alleged cure will soon by competent in the second outhly watched and studied. We can assure that the new alleged cure will soon by competent medical authority. In the meantime we outline that the new alleged our will soon by competent medical authority. In the meantime we shall keep our readers correctly advised of whatever progress is proper to do so.

particle of growth in the sense from the sense of the control of growth and the sense from the sense from the sense from the sense of the control of growth and the sense from the sense of the sense from the sense fro

It has already been amounced that the artioles which have been published from times to
time in the Scientific Press and in the Millman
and Micharic, have been carefully collected
and published in a pamphlet form. We are reosiving many calls for the pamphlet and shall
be happy to answer all applications for the
same. The pamphlets are circulated fives.
Among the applicants we notice the names
of several physicians from the interior. We
spend one of these letters, withholding the
name and location of these letters, withholding the
name and location of the writer for manifest

The Cancer Discussion.

GOOD MEALTH,

TOMATO WINE.—They make a wine of to-matoes in Florida which is said to be superior to orange wine.

Host Telegraph Poles,—The city of New Orleans proposes to abolish the felegraph poles by erects after a streets a felegraph of the wires will be carried towers upon which the wires will be carried 10 feet above the roofs of buildings.

To Perserve Ropes whom Decay.—It is easid that ropes used for congliding purposes, especially in localities where the atmosphere is agt to destroy bemp, should be dipped when dry late a var confering 20 grains of sulphate of copper per niter of water, and kept in this solution about four days. The sulphate of copper aborthed will, it is bolieved, preserve them it may attack of parasites and rot.

as high as £80 per load of less than as high as £80 per load of less than as high as £80 per load of less than two oords. The prices of wood and oosl dut. The prices of wood and oosl dut. 3s. 6d. per 100 pounds; Olive wood, 9s. per 100 pounds; Welch steam.coal £11 per ton, delivered at the chelds. This included the coat of transportation nearly 100 miles on wagons. During the present year the reliced has been completed to Kimberly, and the cost of all suppleted to Kimberly, and the cost of all suppleted to Kimberly, ned the cost of all suppleted to Kimberly, ned the cost of all suppleted to Kimberly, ned the cost of all suppleted to Kimberly reduced.

To Restore Parchweuts.—To restore faded ink on parchment, etc., the Bodleian Library, at Oxford, has long employed bydrosulphide of ammonia, a solution of which is spread in a thin layer over the writing, by means of a camel's-layer over the writing, by means of a camel's-Indian pair penoil. To Keep Flues from Windows.—The question is often seled if there is not some solution that can be put on glass windows to feep flies off. Any solution would but the appearance of the glass. An infusion of smart weed is partially successful in driving away flies, but its use must be ontinually repeated.

Many people seem to imagine that sating is the great business of life, We trequently see the manifest of sating is triange Motions About Esting.

Many people seem to imagine that eating is the great business of life and the oniel end of strategoes, and food a panesce of or all the illie to life. We trequently see the misquided from the the stomach is expensed in the babtot of sating about as amonh readiness as though it were placed in a carpetral placed in a carpetral place and the strategoes of the strategoes Strange Motiona About Eating. gentle. What is true of nations applies equally to individuals; it is an established fact that a babitual setser of ports finally assumes the disposition and amishe manner of a bogs—in abort, the food makes the manner of there are, therefor bobit and intelligence. There are, therefor bobit and intelligence, There are, therefor bobit and intelligence, There are, therefor bobit and intelligence, and regard them as excitoring a semain and regard them as excellent rules, which a man must follow in order to be a perfect man.—Rev. Dr. I. N. Wisc.

What is obtained as an ingenious device in the way of a new tolephone, which may, in the Hollows of a new tolephone, which may, in the tolephone of the way of a new tolephone, which may, in the bear device, come in compelition with the Hollows of the way of a new tolephone, which may, in the Hollows of the way of a new tolephone to the the Hollows of the way to a selectrical come in compelition with the Hollows of the way to a selectrical come to control with the Hollows of the way to a selectrical come the way to a selectrical come to the the Hollows of the way to a selectrical come to the the Hollows of the way to a selectrical come to the the way to a selectrical control with the holes of the way to a selectrical control with the holes of the way to a selectrical control with the holes of the way to a selectrical control with the holes of the way to a selectrical control with the follows of the way to a selectrical control with the holes of the way to a selectrical control with the holes of the with th

ENGINEERING DOTES.

Mechanism of the Heart,
Lectures, in speaking on the mechanism of the
Lectures, in a peaking on the mechanism of the
peart, he described the number of the pulsetions of the heart in different animals—in fielt,
tions of the heart in different animals—in fielt,
tions of the heart in different animals—in fielt,
tions of the heart and the sease per mirute—in
made a few comments on the remarkable slowmess of the heart—the animals—in different
the horse. The work of the sea up to 4000 feet
animals are at versions produced to the sea up to 4000 feet
heart at the level, was brought under review, and
and lowed by a computation of the average
was followed by a computation of the average
work performed by the heart in a healthy adult
the feat of rating 5 tons 4 out, one foot pen
the heart, Parkes calculation showing an exthe heart, Parkes calculation showing an exthe heart, Parkes calculation showing an exthe heart, Parkes calculation showing an exformed a corollary to the hierory of the work of
the work of the heart by the weight of work
the work of the heart by the weight of sea
the work of the heart by the weight of work
the work of the heart by the weight of work
the work of the heart by the weight of work
the work of the heart by the weight of work
the work of the heart by the weight of work
the work of the heart by the weight of son
the work of the heart by the weight of work
the work of the heart by the weight of work
the work of the heart by the weight of work
the work of the heart of select, the mile
age of the proportion of 69 strokes per minute,
thou in the proportion of 69 strokes per minute,
or 5,150,880 miles per day, 61,830 miles per pear,
long life would reach the grand total of 2,809,,
long life would reach the grand total of 2,809,,
long life would reach the grand total of 18,809,,
long life would reach the grand total of 18,809,,
long life would reach the grand total of 18,809,,
long life would reach the grand total of 18,809,,
long life would reach the leave life sure
long life would reach

Mechanism of the Heart,

## IDINING BUMMARY.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

#### CALIFORNIA.

Live Oak.—Lagger, Oct. 1: This mine, which is located 2½ miles west of Jeckson, and is therefore ornsidered off the main gold-besing range, continuous double from the main gold-besing range, continuous double from the main gold-besing range of the paying property. The main shall is 175 feet deep. It was intended to sink soo feet, but the entire stoppage of the waster supply brought the work to a randestill servite than was anticipated. The mill is also dide trom the same cause. The owners, however, as sput or off-shoot of the ore body beredous operation, the same cause. The owners, however, as tend to the old shalt, on as anall vein which is deemed as sput or off-shoot of the ore body beredous operation, and the same cause. The owners, however, as the control of the old shalt on a small vein which is deemed discovering a small seam of quartz which is said to be very rich, free gold being plainly visible.

Miscelliar Almanus.—Nace's mill recently curabed seem in the state of the old shall recently curabed seam the property of the old shall be said to be very rich, free gold being plainly visible, the property of the old shall be said to be very rich, free gold being plainly visible, the property of the old shall be said to be very rich, free gold being plainly visible and the property of the old shall be said to be very rich, free gold being plainly curabed seem in the said to be said to the old shall be said to be seen the said to be said to the said to the

Acoustacy, Cet. 7. Amador Leaker, Oct. 7. Stroutes, The building of the new mill for the Wildman bas The building of the new mill for the Wildman bas built the company has concluded to have about 100 yield. Teams are now engaged in hauling the rock to the Bouth Spring Hill mill. Repairs at the sub-phuret, works are progressing rapidly. When fininged the works are estimated to run for six or eight years more.

years more.

Ptymouth.—Cor. Amador Ledger, Oct. 17. Ply.
mouth is rather dull at present on account of the
Plymouth Consolidated having to shut down the
Company's directed rate of section of the
company's directed are lower than ever before. The
Company's directed are lower than ever before. The
Signs of a mill are visible. The Alpine Co. is presigns of a mill are visible. The Alpine Co. is presigns of a mill are visible. The Alpine Co. is presigns of a mill are visible. The Alpine Co. is prethe account to the property.
The machinery came from below this week, and
they are now busy putting up the hoisting works
and setting the machinery. W, M. McMillen is doing the work.

DRYTOWN,—Cor. Amador Laden

ing the work.

DRYTOWN.—Cor. Amador Leager, Oct. 1: The Gover, mill is running at intervals, owing to the Shortness of water. Some very good rock has lately been found, the ledge being about five feet wide. The Loyal Lead at present is at a standstill, owing the Loyal Lead at present is at a standstill, owing the case of water. The Cosmopolitan, under the management of Mr. Weymouth, has the appearance of a prosperous mire. The engine and boiler will be in running order in about a week. A number of the remaining order in about a week. A number of the remaining order in a few days to cause and other material. The Olive is at a standstill rock taken from the bottom of the splat. Too rock taken from the bottom of the splat. Too being inadequate to keep the water our and some sinking to be done, subtilies.

being madequate to keep the water out and stilow singly madequate to keep the water out and stilow being madequate to be done.

A RICH MINE SOLD.— R. 2007. Oct. 1: We understand from J. A. Wilson, of Vimshew, that he base sold the Confun mine adoining the Cole claim, on hig butte, to an Essiert company, belonging to protect to an including the Bay State Grevel M. Co., and reported to be a rich company, with plenty of capital to packed it. According to report a proved to be rich pack if. According to report a proved to be rich packed if. According to report a proved to be rich bedy in a property of a property of a property of a proved from the code out \$315 in so days last month, with only beyond a doubt as far as prospected, Mr. Wilson took out \$315 in so days last month, with only beyond a doubt as far as prospect with. He says small runnel be had run to prospect with. He cays in the says with a company may expect the respect of readed and the company as there is a showning of the company as a specifical and the says with a company may expect the readed of the company as a specifical and the says with a suited by developed the company as a specifical and a property developed the company as a showning of the company as a specific reader of gravel stream. They have secured the minest from the water, as the mainers in the county, as supt. They have secured the minest form the water, in the county, as supt. They have secured the minest from the water.

#### Calaverse.

San Diego.

Kuterr of Matta Mine.—Grass Valley Union, Sept. 27: The new steam hoisting and pumping works on the Knight of Malta mine, being constructed by Mr. Ayonett, milb e ready to start up in shout ten days. The new shaft, which is 80 feet shout ten days. The new shaft, which is 80 feet of the old one, is down 35 feet, where the flow of water is too large to be handled by hand-power.

THE BLOOMFIELD MINING ELEVATOR,—Nevada THE BLOOMFIELD MINING ELEVATOR,—Nevada Glod Co.'s gravel claim by the elevator process gives employment to about 40 men in all and yields moderately good returns. A bank about 135 feet high is esseived on style freesen, and the system of settly good returns. A bank about 135 feet high is inserted on style freesen, and the system of settly good returns. A bank about 135 feet high is inserted on style where more the company to have the lings reservoirs enables the company to have the Gottly st the lower mouth of the tunner are gathered daily at the lower mouth of the tunner and satisfactors in court or elsewhere. The elevator as evidence in court or elsewhere, The elevator set in court or elsewhere. The elevator are hydraulicking, but in the Worth Bloomfield abote to fact set in court or elsewhere. The elevator all frough the drift from bedroek to surface, it pays in finitely better than drift mining would.

KNIGHT OF MALTA MINE,—Grass Valley Union, Knight or

Nevada.

PROSPECTIVE MINING.—Graestle, Oct, 1: The Mining and Milling Company which filed Solvetock Mining and Milling Company which filed satisfies of incorporation in the office to the Secretary of State at Sacramento, under date of September 13, of State at Sacramento, under date of September 13, of the September 14, of the state of the satisfies of the September Mining September 15 and the Shorlock Mining Dispate the Dilks mine and the Shorlock Mining Dispate the Dilks mine and the Shorlock Mining Dispate the Mining Sprosperity.

METIDOSS.

MOUNTAIN LEDGE.—W. W. Casselly, superin-tendent of the Mountain ledge, owned by G. H. O. Sunderhaus, Sierta City, reports good progress at the mine. A good trail is being constructed, and at boarding-house, will soon be built. Twenty-three men are employed. A tunnel will soon be started for the ledge. This property is one of the most valuable in old Sierra.

Definity is well watered.

PLUMBAGO QUARTZ.—Mountain Messenger, Oct.

1: Parties site at work prospecting the old Plumbago quarts ledge at Minnesota, from which very tempts to prospect it have been made during the past so years, but have been abandoned without actempts to prospect it have been abandoned without actempts to prospect it have been abandoned without actempts to prospect it have been abandoned without actempts in the property of the prospect of the prospect of the property of the prospect of t

per ton; the first lot returned them too.53 ounces silver ton. The core its shipped to the Reno Reduction Works. The silver its in masses of bright crystals mixed with gray quarts. At first sight these crystal line masses might be taken for ordinary gelena, but no return for lead has yet been made from the ore. So far as opened this ore body gives indications of being extensive and provings a very valuable proper, by. Mr. Greenly operated at Cerro Gordo in its fast as writing and he says this is the best crome be even that is the core of the fast seem of this ore yielded over that is not yield; same parties have found a vein of gold-bearing or that is seen to be some parties have found a vein of gold-bearing or that is seen to be some parties have found a vein of gold-bearing or the some parties have found a vein of gold-bearing or the or oper for. The vein is well was a seen done upon it. Deep Spring promises to be gold on the C. & C. it allroad. The ceast from Alvord on the C. & C. allroad. The country is well wastered and there is plenty of timber of the country is well wastered and there is plenty of timber.

GOOD ROCK.—Caleverse Chromicle, Oct. 1: We were shown some overy the specimens of rock taken were shown some very the specimens of rock taken (Toon the California mine, owned by S. C. Putnam & Co., the other day. The mine is and a half above the the Nokelumne river, a mile sand a half above the cuesting of the Kalivorad Flat section of country. Like many other mines in that section of country, this way worked to a certain extent by Mexicans in this was worked to a certain extent by Mexicans in this was worked to a certain extent by Mexicans in this was worked to a certain extent by Mexicans in this was worked to a certain extent by Mexicans in coulds and solomon tried to work the lead, but could prospeots. A shaft was sunk 35 feet, showing rich not make it pay, Some three months ago, Messre, A shaft was sunk 35 feet, showing rich to tap the vein at this point.

STARTED UP.—All the necessary machinery for bother works the work shaft was the worke works thought in & Co., near the fluench-house, and everything being in readiness, the worke were all the extra the fluench-house, and everything being in readiness, the worke were into the part Tuesday, and are now running steadily everything being in readiness; the worke were into the part Tuesday, and are now running steadily deverything being in readiness; the worke were into the part Tuesday, and are now running steadily the weath and the steady.

EMERRALDA.—Prospect, Oct, r. A large boiller in the book of the point of the part Tuesday, and ste now running steadily the worke were the thouse were the thouse were the thouse were the thought were the thouse were the difference of the part Tuesday, and ste now running steadily the part Tuesday, and ste now running steadily the part Tuesday, and steady of the part of the part Tuesday. Bette better the part of the part Tuesday, and steady of the part of th

ESMERALDA.—Prospect, Oct. 1: A large boiler was taken to the Exmeralda mine last Wednesday. It is to take the place of the old boiler now used at the ten-stamp mill. The mine is looking better than the ten-stamp mill. The mine is looking better than ever and the proprietors are feeling in good spirits over a rich surke of late.

CLIFF MINE.—Independent, Sept. 27; Greenly Spring, in the Inyo range. They are saking out most springer in Deep and springer in the last shipment was of two IDYO.

perous winter at North Bloomfield is said to be cellent. The Derbec and Mabel mines, both worl by the drift process, are being run to their full capacity. All things considered, it is safe to intat there is a prosperous future for Morth Blooms. The contraction of the contraction

GOLD VALLEY.—Sierra Tvribune, Sept. 29: At the Gold Valley mine about six tons of ore are being reduced daily with good results. The mine is improving constantly and competent judges are of the opinion that it is destined to be one of the big properties of this section.

The opinion that it is destined to be one of the big properties of this section.

FOREST KING,—The management of the Forest King mine changed hands a short time ago, The mill has not yet started up.

### Siskiyou.

COLORS FROM THE MINES.—Yreks Union, Sept. 29; Ex-Lieutenant Governor Daggett of Black Bear bas just returned from a trip to Knownothing creek and writes us that he can truthfully say that the quartz outlook in that he can truthfully say that the quartz outlook in that the can truthfully say that the quartz outlook in that district is good. The success of these mines is another irresistible argument mountain from Eina. Geo, Smith of Eina has mountain from Eina. Geo, Smith of Eina has mountain from Eina. Geo, Smith of Eina has amountain from Eina. Geo, Smith of Eina has arructing a large dright to he mise on Mochádam curedy been foreing a large dright to he mise will probe entering the farm of the mine in the entering pumping and hoisting machinery, which have shaulting a large dright to has have all the time work was suspended in this mine it was larged to men, that the time work was suspended in this mine it was the first the time work was suspended in this mine it was min of such of the man. Harry Doney and Ed Carlack in the work was suspended in this to McCloud note; where they suspended in this work was full care way, will return as soon as they can get away.

Will return as soon as they can get away.

Trinity.

HULLYCHOOP.—Trinity Yournal, Oct. 1: The Bullychoop mining district is gradually coming to find from the front. The Cumberland Mining Company own or have an interest in most of the mines in the district, and they are making preparations to push trick, and they are making preparations to push a crack and a shoot by which to rapidly convey the areack and a shoot by which to rapidly convey the core from the Eureke mine to the mill. None of the ore from the Eureke mine to the mill. None of the present from the Eureke mine to the mill. Mone of the present as a prosperious an owners will keep up the present methods of operations and the continues to pay as usual and the owners will keep up the present methods of operations as long as the mine has as prosperious an outform as long as the mine has as prosperious an outform as one as in the mine has a prosperious an outform as one as in the shall when the first mail and freight, and all parties arriving passentions and the present methods of portions are boptiably eared for at the botel of Smith & Johnston.

Dead as the mining and the present method of Smith & Johnston.

DEADWOOD DOINGS.—Mt. Henry Martin of the Brown Best mine was in town Thursday and informs us that Deadwood interests are progressing favorably. Last week Mr. Wm. Blegrave found a brown Best Company. The Last Chance turned bas been driven in to a distance of about 500 feet when the fouring of the air necessitated the raising force of men is working at each end of the sharing expect to have it completed in about six weeks. The mild at the Brown Best is tunning steadily on one which averages about the same as usual, and the one which averages about the same as usual, and the company is continually prospecting and developing tip property.

Plumes.

Plumes.

Plumes.

Plumes.

Plumes.

CRANITE BASIV.—See & Jolly, of the Specimen mine, hope soon to srike the ledge in the lower tunine, hope soon to srike the ledge in the lower tuning, which will sap the ledge in the lower tuning, which will sap the ledge in the lower tuning, which will sap the ledge in the lower tuning, which will sap the ledge in the lower tuning of the ledge in the lower tuning and the ledge seems of the ledge seems its property.

Tuolumne.

Fiver CLRM.—Tuolomne' Nadeknadent, Oct. 1:

We learn that Mr. J. R. Moffit has struck rich

We learn that Mr. J. R. Moffit has struck rich

pects as high as from \$1.5 M. Moffit has struck rich

pects as high as from \$1.0 Se. 50 to the pan have been

pects as high as from \$1.0 Se. 50 to the pan have been

He is working on the old river-mining style, with

the is working on the old river-mining style, with

He is working on the old river-mining style, with

He is working on the old river-mining style, with

Will reloice that there is now as good prospect that he

Will reloice that there is now as good prospect that he

Will reloice that there is now as good prospect that he

Will reloice that there is now as good prospect that he

Will reloice that there is now as good prospect that he

Will relize bandsome relums.

We learn that if he expenditure of a large smount of

work and the expenditure of a large smount of

work and the expenditure of a large smount of

work and the expenditure of a large smount of

work and the expenditure of a large to renount of the characterisms.

We shall position, the gravel yielding from \$1 to \$2 M.

work and the expenditure of a large smount of

money to reversit years he has hought that torrent

under subjection, the gravel yielding from \$1 to \$2 M.

work and the expenditure of a large smount of

money to reversit years he has hought that torrent on

menced Thursday. He is proving that there is still

rich days and the cold Tuolumne river.

#### MEVADA.

#### Washoe District.

Whether, — The Street, Oct. 7: On the 500 level No. 1 east crosscut has been extended to feet. This duff shows ore of a good quality for a distance of the food gradity for a distance of the feet. On the soft unimo started a drift south from the face of this crosscut, following the ore in the distance of this crosscut, following the ore in now advanced too feet, and bave encountered in his faction. No. a sast crosscut No. 2 and resumed this diff the south extension of the ore found in this discontinued east crosscut. No the good level have tempored in the continued east crosscut No. 2 and resumed this diff the south extension of the ore found in this discontinued east crosscut. An interest the encountered in the diff the south extension of the ore found in the diff the south extension of the ore done of the ore diff. The continued to the continue of t

STONEWALL MINE. —San. Diegon, Och. I: Work is progressing on the new ahalf, that is being sunk about soo leet from the old one, in a southerly direction. The staff is mow down shout. The staff is mow down shout. The staff is proposed to put it down 300 direction. The old the proposed to put it down 300 feet, and it is proposed to put it down 300 feet, and it is proposed to put it down 300 feet, and it is proposed to put it down 300 feet. New Burleigh drills have been placed at seated drill the ledge is reached where was months, and as soon as the ledge is reached, the stamps will recommence work, the one baft shout three months, and as soon as the ledge is reached, the stamps will cocommence work, the one being cattled to the mill on a tramway from he over being cattled to the mill on a tramway from the new shaft. It is expected that a, fine grade of one being cattled to the mill on a tramway from the new shaft. It is expected that a, fine grade of one being cattled to the mill on a tramway from he say that a first way from he are shaft. It is expected that a, fine grade of one being cattled to the mill one a tramway from his already large exchequel largely increased.

ALASKA MINE.—Slorra. Steptnes, Sept. 27: The Steptnes Allower Scient Jribune, Sept. 27: The reports from this mine are most encouraging. At and as places in the drain tunnel, 57 feet from the surface, ore bearings a large percentage of gold has surface, ore bearings a large percentage of gold has surface, ore bearings a large percentage of gold has surface, ore being the mine is struck. The efficient management of the notes until as the mine is struck. The efficient management of the mine is struck. The efficient management of or China is struck. The efficient management of ore or of our tides, giving employment to scores of the office gest, giving employment to scores of the disage, giving employment to scores of the disage, giving employment to scores of the classes have and struck. There are not only managed the struck of such convenient disages and the such convenient disages and of such convenient disages to of such convenient disages to of such convenient disages of their mines. The most such their mines, the own of their managed about the mine, the mine is and present of the mines. The outlook for a prosent of the control of the mine is the mine, the outlook for a prosent of the mine in and disages the mines.

OVER 300 MINES.—Eureke Sentinel, Sept. 30: Bureke Jestrict.
Guby Hill is only a sput of Prospect mountain, and format only a very small portion of Eureke mining beyond the Section and Kichmond, there are streated on Ruby Hill the Jackson and Pheres rese streated on Ruby Hill the Jackson and the streated on Ruby Hill the Jackson and Pheres its streated on Ruby Hill the state of Montal Hill to the north of Ruby Hill, there are the Salver Lick, Adams Hill Con. and several other mines that are steady producers and have yielded ministers. The Dunderbert, Comolly, Hamber of Mollars. Prospect mountain have priced from mines developed and moredeed of the proper of the state being may be said of Mollars. Prospect mountain have priced from brunders to Inducted so Industrial has a minister of mines developed and district proper there are over the brunders of undered so Industrial has beev yielded from hunders to househed that Evertain mines developed as and strict proper there are over the mountain the said of the more of the more of the said of the more of the said of the more of the said of the more of capital have been employed in them for purchase more and deen employed in them for purchase more and deen miles, 75 of which as and producing roce in earth they did not realize the said of the more of capital have been employed in them for purchase more and deen one, and that less than \$4,000,000 of capital have well have the said of the more of each to continue with their earnings with our market of the form the gambled and had been employed in them to deep to continue with their earnings with our marchinery to sid them, they had to quit. Capital is in eneed to develop the mines of Eureke district and while world that can make a kenter showing.

But all the world that can make a better showing.

Eureke District. Union and Mexican,—Ru naing laterally north in both mines on the 1300,

HAYWOOD,—Are sinking the winze deeper and running the tunnel further. Both are in ore, OPHIR,—Sinking the winze on the 1300 level to connect with the 1465.

Baltimore.—Are headling the water with th imp, and are extracting ore and exploration in ogressing. U. HAP. — North lateral drift from west cross-it No. 2 has been extended 5 feet in favorable-uking tound.

SCORPION.—East drift on 300 level has been advanced 18 feet, and is now 961 feet distant from the batter. The feet of the drift is in hard prophyty.

OCCIDENTAL.—In Mo. s. upraise, not feet below the upper tunnel, are cutting out a station preparatory to cutting not not set of things on the vein.

ANDES.—Have finished trepaining the drift on the 350 level, and are drifting east on the 240 level in a promising formation.

ALPHA AND EXCHEQUER.—September solb com-menced sinking the shaft on sest level of Alpha, to send if too feet deeper to explore Alpha and Ex-obequer.

The new drift from the main east drift is now about to feet.

CHOLLAR AND POTOSI.—Yesterday work was CHOLLAR AND POTOSI.—Yesterday work the 450 commenced to sink the Sharon shall from the 450 level too feet deeper, where there is a drilt from the BULLION.—Usual progress is reported in the BULLION out about 750 lest. The new drilt from the main seast drilt, whose is now about the 150 less than the main seast drill is now about

BEST AND BELCHER.—On the 1300 level from the edo of the west drift an upusite has been carried up a total distance of 67 feet. It is on the line of the Consolidated California-Virginia, and Best and Selebase.

work should cuers.

Cov., CALIFORNIA AND VIRGINIA.—Taking out
more than the usual amount of ore since so stamps
and to gaze bave been added to the reduction power to the company. To-day they will commence
shipping ore to the Eureka mill on the Catson river,
and it is no splendid repair.

The mill is in splendid repair.

Here AND BEIGHER —On the Ison level from

hanned.

ALTA.—Are upraising in the Keystone vein on the 785 level, in fair milling ore. Also upraising on the 785 level, in fair mille be in condition to pay its the triol overly in fair mine will be in condition to pay its own way for development expenses, and if good ore is found it may be placed as a dividend-payer.

SEGRECATED BELCHER.—There is no change since ore is found it may be placed as a dividend-payer.

SEGRECATED BELCHER.—There is no change since of its own way for in clearing out in order to get good air. The air was bad and made the men sick to work stround there.

COM, CALIFORNIA AND VIRGINIA.—Taking out COM, CALIFORNIA AND VIRGINIA.—Taking out

progressing.

promising formation.

Beinged here in the Green and the many of the sure of the sure and the many of the many of

#### ARIZONA.

has been advanced at deet, Rook is better working, and better headway will be made,

Wild Robe District.

Wild Robe District.

Sering CITY MINES.—Sitzer State, Sept. 31:

Reports from Spring City mines are highly encourable on the state of the state of the core from this mines are being be seried. The over the state of the state

the old hoist.

FOUND TREASURE.—The engine and boiler have been placed in position during the week.

PONDERE.—Since air pipe has been placed in the shaft, has air is good. Shaking was recumed on the shaft, has air is good. Shaking was recured on the well, Ledge improves las greater depth is attained, well, Ledge improves las greater depth is attained, stopped annil machinery can be erected. Prospect shaft has been shaken to feet. Work on the hoisting shaft has been whill be made through this crossent in about four day. An anade through this crossent is about tour day. An anade through this crossent in about tour day. As stopes are yielding as well as a stope day. And, a stopes are yielding as well as a stope day. An anade through this crossent in about tour time betrefore. No. I crossent on 12 is bout four time betrefore. No. I crossent on 12 is bout four time betrefore. An I working, and better headway will be made.

and better headway will be made.

But the made better headway will be made.

MORTH BELLE ISLE—Regular operations in the mine have been temporarily suspended, pending the erection of the new gallows-frame and removal of the old holst.

Tuecarora Dietrice.

Diana. Times. George 30: Pair progress
has been made in the crosscut from the xgo-foot
level of the North Belle Isle.

Her Arcus, — White Pine, Mean, Sept. 37:

Last Saturday we went through the surface mine of the Argus excite. Descending the mine by isdeters, the Argus excite. Descending the mine by isdeters, all the upper stopes and artic were gone in five through in several of which one is still being extracted, and none of which showed agas of "peterings." The several of which showed agas of "peterings." The necessarily expensive. Continuing down we found be a fact of the one of the more is resched at a depth of a little but of the one of the more is resched at a depth of a little but of the one of the more is resched at a depth of a little but of the one of the more is resched at a depth of a little but of the one of the more is resched at a depth of a little but of the one of the more is resched at a depth of a little by yourheast right into the resched at a depth of a little by yourheast right into the mountain and look attorn to be one of the more and the one rights. The veins pitch east to write have good one is being to be the one of the mine—some, it is true, of low grade—but taken, and which some good one is being of the mine—some, it is true, of low grade—but taken, and which some good one is being of the mine—some, it is true, of low grade—but taken, and which some good one is being of the mine—some, it is true, of low grade—but taken together would perhaps mill between \$40 and of the mine—some, it is true, of low grade—but a few company is now down to dear of debt, they one of the mine—some, it is true, of low grade—but taken together would perhaps mill between \$40 and of the mine—some, it is true, of low grade—but the company is now down to dear of debt, they one deed to the company is now desar of debt, they one dends on their investment.

the croppings can be fraced for a long distance. It is now being worked about 18 degrees and the collection of the colle

CERBAT.—Cor. Mobave Miner, Oct. 1: The tunded is being pushed acked to make connection again to the Flores mine is one of genuine, earnest activity. Col. Kinxer is pushing the work in every activity and say, and by the time self-every and surface workings with good results. Last week diverse to a necessary other detail and say about the initial "startup," will have been completed for the initial "startup," will have been completed for the initial "startup," will have been completed for the initial "startup," with the exception of a few milb ubilding completed for the initial "startup," with the exception of a few milb ubilding completed for the initial "startup," well have been completed for the initial "startup," with the exception of a few milb ubilding completed for the initial will be shown to a depth of 64 feet, and a crosseut from the fanging-wall is reached the milb ubilding completed for the hard in the conventions. The supplementary of the feet, and a crosseut from the fanging-wall is reached the milb ubilding be an expensed to the hard in the expense of water. This work is being pushed a crosseut from the fanging-wall is reached the properties of water. This work is being pushed a crosseut from the fanging-wall is reached the properties of water. This work is being pushed by the time for the hard is few more against the cast of the fanging wall is reached the milb the same fanging for the fanging wall is reached the milb the same fanging for the fanging fanging for the fanging for the fanging fanging for the fangin The Hoop. — Georgelown Courter, Sept. 29; Hood Jode, They are now down about 40 feel below the dead sinking on the Hood Jode, They are now down about 40 feel below the sali and have had mineral nearly the entire distribution of the shalf shows about as bour as distribution of the shalf shows about as feel below frame. Stromberg & Weiser, who are working the ground about 150 feel feel wo working will be commenced raising on Monday morning to meet the commenced raising on Monday morning to meet the fire ground about 150 feel feel wo workings will be commenced raising on Monday morning will be strong on the Astor, pending that the company has arranged to raise, A mine on which the direction of an installment of more we spiral fast the company has arranged to raise. A mine on which the directions of the installment of where and merotants. The town would have been thousands of dollars shead the direction of the Mendia. The feeting sarranged to raise of dollars and merotants. The town would have been thousands of dollars shead had every company pursued the wise and bonest policy of Mr. Foster.

The Mendia. The miners and merotants. The town with the shall not be worked at the cumple of Mr. Foster.

The Mendia. In the miners and men are employed on the Mendia. The former work intended wheel to make compension in the Mendia. In the shall not be surface workings with good results. Last week to be seen from the think level is being pursued the surface workings with good results. In the former of the morner of the miners are subjoyed from the fifth level town willings Co., has been buying about a sud receelly 70 tons were sold to Dewey & Co., at the Farwell mill.

#### COLORADO.

LUCKY CUSS.—The new shaft is now down 60 feet in country rock. The face ove body developed from the prospect shaft further west will be tapped at a depth of ago feet. The Citerd hoisting machinery, which was recently removed to this mine, is in good working condition.

PONY EXPRESS.—Wan. Clancy, with others, has relocated the Excelsior mine under the mame of Pony Express, and claims to have this week uncovered are eight-foot ledge of quartz carrying horn silver.

Dence is not state, and better it for state, and Edward Koch of Chicago bought this property in a boud held by W. B. Benson, for the small sum of \$6000. At that time the only development was to \$6001 shalf. Since then a force of men have neen at work, and the results have proven more than it is offered, a crosscut run to the hanging-wall, 28 ansistetory. The shalf was continued to a depth of 100 feet, a crosscut run to the hanging-wall, 28 evet distant, all in ledge matter, and a wince has even runk so feet in ore.

By the way, this tuns into the Old Colonely, owned MINING (Revival.—Tombstone Epitoph, Oct. way judged Dryden.

MINING Revival.—Tombstone gives constant evidence of increased volume and permanency. Along the mineral belt, from the Silver Thread south the count 400s, a distance of nearly flow miles, the mineral belt, from the Silver Thread south the count 400s, a distance of nearly flow miles, the mineral belt, from the Silver Thread south the count of men employed than have been seen in the past three years. A sure sign of the mining boom is three years. A sure sign of the mining boom is three years. A sure sign of the mining boom is the past inon notices are filed for record. Much vacant form only expected the mining that the man post of the corning of the corning showed to contend in the mining boom is since the mining the wash been that the mining the wash and lava-beed to the cornibeast of the condustively bave that the mineral belt passes beneath the wash centered in that direction, and the result has shown that the many locations have been medels in the camp have estreed in the direction. And Hock—The survival in the camp this seculor in the Orthur Hock—The survival in the camp this in the Ground Hock—The survival in the district councilered intendent of the cornibate of

to company to the Beel Stanight distinct, unit of the company to the Beel Stanight distinct, unit of the company to the Beel Stanight distinct, unit of the stand of Medicine and the Stanight of the Stanight

ADIVIDE DISTRICT.—MAY-Mountain, Sept. 38: Apgust Miller, who is interested in the mining district meat Divide, reports an encouraging outlook in that country. The spuragate an encouraging outlook in that country. The spuragate an encouraging outlook in that country. They are misting preparations to one of course from whitch the most is expected, is which fively her perspections to the company are the first-Class, which has alrege experity at the whole they have perspected to the company are the first-Class, which has already been the shaft on the first-Class, which has already been company as the claims and will drive it clear and y for the claims of the company are the first-Class, which has already been company as the claims and will drive it clear and of the company are the company as the claims and will drive it clear first of the company are the company as the claims and will drive it clear at the Bottone of the company are the company as the claims and will drive it clear at the Euchon of the Class at a depth of yoo company are the first of the Monument and Backbone; from a for the first of the Class at a depth of yoo are to the Inner has progressed too feet. The catterne lower through the Monument and Backbone ground and arive in about too feet, and show are pushing this job. A so-stand mill arrike the lead at the depth of yoo cleen. This stater tunnel has been or the depth of too the road. These operations individual and bow some good ore. Shafts bare seen been and bout go feet. The same vein as the Apex Co. It he limited by the beginning of the Apex Co, the Irangluir and bow some good ore. Shafts bare as downed by the beginning in the Monument and been caused by the beginning of the Apex Co, the Brasse Cly wount the bill. These are pushing this job. Some good ore. Shafts bare been runk about go feet. The same vein as the Apex Co, the Iranged by who are connected or the Monument. The softwiny that has a company for the purpose of wow mits pill. The sear of the Kittle O'Berton and a beginning the distric

#### .ANATHOM

Only a very tew months since, our old triend BeeSainbary & Co. to ercer concentrating works for
Sainbary & Co. to ercer concentrating works for
Sainbary & Co. to ercer concentrating works for
the reduction of the Bescheley ores; and short as the
time fast been, he has it almost ready to move,
the reduction of October, if the necessary materials arthe Jusso Group.—Inter-Aidaho, Ooi, 1: This
have a capacity of 65 tons per day.

THE JUSSO GROUP.—Inter-Aidaho, Ooi, 1: This
have a capacity of 65 tons per day.

THE JUSSO GROUP.—Inter-Aidaho, Ooi, 1: This
have a capacity of 65 tons per day.

The JUSSO GROUP.—Inter-Aidaho, Ooi, 1: This
have a capacity of 64 tons per day.

Where the stream incent in the selected
housiness men of Alturas county, and of Hailey in
have had their meeting and have elected
intertory have had their meeting and have elected
intertory have had their meeting and have elected
the officers of the company for the ensuing year,
who are as follows: James Gunn, president, Rithe mangerement will mow progress steading with the
testay; and J. Burkett as tresaurer. We trust that
the mangerement will mow progress steading with the
development of one or the counter of the mines of the
testay; and J. Burkett as tresaurer. We trust that
the mangerement will mow progress steading with the
testay; and J. Burkett as tresaurer. We trust that
the mangerement will mow progress steading with the
testay; and J. Burkett as tresaurer.

The Jundo proper shows a large verton the curtestay; and J. Burkett as tresaurer.

The Jundo proper shows a large verton the curtestay; and J. Burkett as tresaurer.

The save of the company
of the several kinds, the earettell assortment
of the several kinds, the ascertainment of the value
of the several kinds of ore per ton.

PARK NOTES,—Record, Oct, x: For some time past preparations have been made by local mining peat preparations have been made by local mining operators to incorporate a group of valuable claims on the Cottonwood side of this great mineral-bear-ing better the Cottonwood side of this great mineral-bear districts. The work has been accomplished in the Organization of the West End Mining Co., with of ATTHE MASACHUSETTS,—Manager Curtis was ATTHE MASACHUSETTS,—Manager Curtis was in Salt Lake this week burrying up the ore ears, and in Salt Lake this week burrying up the ore ears, and more men can be put to work in the mine very soon, sort with the past of part in work in the mine werk soon, and so have thing is in a sing-shape for active developments and a long run.

#### .HATU

PLACER AND QUARTX — Jacksonville J'smer, Sept. 30: John Miller is busily engeped in rigging by John Miller is busily engeped in rigging of or of or for the Neuerie ladd of or winter. I will a series of good of or form the Neuerie ladde of sending several tons recults. Parties from shored are still hankering several tons shored are still hankering settler from shored are still hankering after the J. M. & M. Co.'s mine on Jimber guich, which is no doubt a faire-less cone. There is some probability of the Dutch mine on Powell's creek, with the Junch mine on Powell's creek, with the propercing a quarts ledge and Cornelius & Co.'s with the prospecting a quarts ledge and Cornelius & Co.'s minh the water supply, has a stoo been superbeded. Three prospectors tom Nevade, who recently arrived at Gold Hill, are not being operated at present in the stoo deen suppended to turned the stoop of the prospectors from Nevade, who recently arrived at Gold Hill, are not being operated at present and the fair of the stoop of the prospectors of the prospectors of many many of the prospectors of the pro

#### OREGON:

part of the county.

WATIVE SILVER.—Socotro Ballion, Oct. 1: Mative silver has appeared in the U. S. Grant mine of
the silver has appeared in the U. S. Grant mine of
the time high-grade ledd and silver or. The proptips time high-grade ledd and silver or. The property is certainly improving rapidly in value. The
East, Mineveh Copper, Orphan Boy and U. S.
East, Mineveh Copper, Orphan Boy and U. S.
M. Co., arrived from St. Louis last Sunday and
M. Co., arrived from St. Louis last Sunday and
turned Tuesday and expressed himself to the Bullion
turned Tuesday and expressed himself to the Bullion
turned Tuesday and expressed himself to the Bullion
man as anote than pleased with the appearance of
the Carmero; in fact, he found that property much
more valuable than he had anticipated. The company of which he is the executive will lose no time
in developing their property

Work has been resumed at Shakespeare, on the campion of wegrad camps in Grant county, and a resumption of work part of the county.

Nature Surver,—Seconto Bullion, Oct. 1: Mathematical County, and the county of the county.



### LIFE-SAVING RESPIRATOR

Entirely Prevents Lead Poisoning

and Salivation.

The most perfect appliance for people engaged in Sametirns. Dry Crashing, Grano Worke, Quickeilyer Wilnes, Lead Corroding, Threshing and Stocke-triving, and all other compactions where there is the state factor of the state of

FF Send for Descriptive Circulars containing Testi-onials of well-known parties who are at present using JOHN TAYLOR & CO., Sole Agents, to 118 Fine St. 114 to 118 Pine St.,



## HOISTING



96 Liberty St., New York. LIDGERWOOD M'F'G COMPANY,

Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link

**LOB WINES** 

ENCINES

PACIFIC COAST AGENTS,

PARKE, LACY & CO.

44 Third Street, San Francisco, MINCHEZLER HONZE

This Fire-proof Brick Building is centrally located, in the healthicke bart of the city, only a half block from the drand and Palace Brotele, and olose to all Steamboar and failing difficult.

Leandty Free for the use of Families Ears arrae Gloo Gra Ton

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

## AMERICAN EXCHANGE

HOTEL, Sansome St., San Francisco. One door from Bank of California.

The above well-known hotel offers superior so-commodations to parties within the The table is kept at top grade and the prices are within the factor of the prices are within the

RATES—\$1.00, \$1.25 and \$1.50 per day
Tree Coach to and from the Hotel
OHAS. & WM. MONTGOMERY, Propire.

San Francisco Cordage Factory.

Gonetantly on hand a full assortment of Manila Rope, sea Kope, Tarred Manila Kope, Hay Kope, Hay Kope, Hay Kope, Hay Kope, order on abort notice Extra sizes and lengths made to order on the tording the sizes and lengths made of TUBBS & OC.

611 and 613 Front St., San Francise

CONTRACTORS, ATTENTION!

WALTER C. CHILDS, Glencos, Caleverse Co., Cal., or of GHLESPY & CHILDS, 123 California St., San Francisco. D IDS ARE INVITED TO CONTINUE A TUNI lier pair inquire of WALTARD TO CONTINUE VACUUM PRINTED TO CHILLDED DAY

ULDA BROS., Proprietors, Spear St., San Francisco.

30 to 40 Spear St.,

MASSEY'S STEAM HAMMERS, SCHLENKER'S BOLT CUTTERS, HOLLOWAY FIRE EXTINGUISH-ERS. H. W. JOHNS, ASBESTOS PACE. TYME VAD BODIEK SYM MILTS NEW YORK BELTING AND PACK-BRADLEY CUSHIONED HAMMERS TURBINE WATER WHEELS. DISCLON'S CIRCULAR SAWS.

SOLE AGENTS FOR

HOOKER & LAWRENCE, Gen'l Agents.

THE FRISBEE-LUCOP MILL CO.,

Any method of smalgamation may be applied.
At 300 revolutions per minute will pulverize 2000 pounds of quarks per hour to 60 mesh
dry, and from 3000 to 6000 pounds wet.
All wearing parts easily and cheaply replaced. May be seen in operation at the New York
Metallurgical Works, 104 and 106 Washington St., and Pacific Iron Works, San Francisco.
Certificates as to performance of the Mills, and any information required, furnished on

ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

CENTRIFUGAL ROLLER MILL

EEISBEE-LUCOP

ROBELING INTECTORS AND ETEC-

NATHAN AND DREYFUS OILERS.

TAUITE CO.'S EMERY WHEELS

првои висиме солекнока.

PICKERING ENGINE GOVERNORS

EMPIRE LAUNDRY MACHINERY,

SOUTAL ENGINES.

VAD BOITEES\* VALVE ENGINE MORKE ENGINES

ENGINES' HOIZLING

San Francisco, Cal,

NEW YORK

OLLO SITENT GVS ENGINES

BEVIOUED MITTING MACHINES

SHIMER MATCHER HEADS.

EXHVORTS' BLOWERS

EERIN BVND SVM BUVDES' WEBBER CENTRIFUCAL PUMPS.

PUMPS, IMPROVED STEAM

TOOLS, SON'S MACHINISTS

CHINISLS, LOOFS'
NEM HVAEN WVANDE,G CO',S WV-

MACHINERY.
FRANK & CO.S. WOODWORKING

J. A. PAY & CO.'S WOODWORKING

HOMM

Cor. Fremont and Mission Sts.,

Office, 145 Broadway, cor. Liberty St.,

BICKKOED, S LOMER DRIFTS'

YACHT ENGINES.

# **ENCINES** Sug BOILERS

FROM 2 TO 100 H. P., ALWAYS IN STOCK

MILL SUPPLIES AND LUBRICATING OILS.



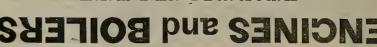
For Sale by all druggists.

and the mirror of the control of the

HORSE LINIMENT.

CALIFORNIA WINE COOPERAGE WINE TANKS!

ALL KINDS OF CASKS, TANKS, Etc.



## Metallurgy and Ores.

### SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets. And Assay Office. COLD AND SILVER REFINERY

BLUESTONE, .... MANUPACTURNES OF ....

LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO., Under Chamberlin Patent

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GIVSSAMBEE VAD SAADBIES' ELC CHEMICAL APPARATUS AND CHEMICALS' DEUG

114-118 Fine Street, - San Francisco, We would call the attention of Assaysrs, Ohemists, Milling Companies, Frencers, Eurance to our full stock of Belances, Furnaces, Muriles, Crucibles, Boothfers, etc., including, also, a full stock of Diemicals.

Our Gold and Silver Tables, showing the value peour Gold and Silver Tables, showing the and valueble
to compute the degrees of theores, and valueble
to compute the open spelication. Against or the free me
so of this woul-known manufacturer are thoroughly
so of this woll-known manufacturer are thoroughly
to the woll-known manufacturer are thoroughly
and full weight of Silver graranteed. Order
to the woll-known manufacturer are thoroughly
so of this woll-known manufacturer are thoroughly
to the performance of the perform

Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

Mear First and Market Streets, S. F.

Отев worked by ялу Ргосевв,

Ores Sampled

Alea Samptee.
Assaying in all its Branches,
Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications turnished for the
most suitable Process for Working Ores.
Special attention paid to Examinations
Mines: Plans and Benorts turnished.

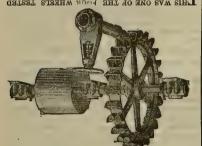
Mines; Plans and Reports furnished,
O. A. LUOKHARDT & OO.,
(Formorly Hubn & Luckbards, )
Mining Engineers and Metallurgists.

METALLURGICAL WORKS.

Sig Pine 9t. (Basement, corner of Leidesdorff Street, - SAN FRANCISCO

Assaying and Analysis of Ores, Minerals and Waters.
Mines Examined and Reported on.
Prectical Instruction grown Treating Ores by im Ores Sampled and Assayed, and Tests made by my

PELTON'S WATER WHEEL.



THIS WAS ONE OF THE PROOF WHEELS TESTED A by the latho Company & foresse Valley, Call, and Yeve 90 2 per conf., distancing all competitives. Bend for Merchants and guaranteed estimates.

Agents—Pradkie & LACY, SI and 25 Framon's Street San Francisco, Cal.

INVENTORS, TAKE NOTICE!

258 Market St., N. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin copper and bress. L. PETERSON, MODEL MAKER,

> AT SEND FOR CATALOGUE TO QUARTZ MILL. Hantington Centrifugal

CORNISH ROLLS,

JIGS and TROMMELS.

FRASER & CHALMERS,

ENGINES AND BOILERS.

edrow gaitlears gas verizer is without rival.

This Mill as a Crusher and Pul-

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

**ENCINE2** PUMPING

MACHINERY,

CORNIZA

,29MU9

GENERAL OFFICE AND WORKS:

Fulton and Union Streets, Obicago, Ill.

NEW YORK OFFICE:

Room 48, No. 2 Wall Street.

UTAH OFFICK-SALT LAKE OITY, UTAH. MEXICO OFFICE: No. 11 Oalle de Juarez, Ohlbushua, Mexico.



COLD MINERS

Quartz, Gravel and Placer Mines!

**SMALGAMATING** PLATES Silver-Plated

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Over 3000 Orders Filled.

Fifteen Medals Awarded.

These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Old Mining Plates Bought, Replated, or Gold Separated.

San Francisco Gold, Silver & Nickel Plating Works, Assayers' and Mining Material, 712 to 718 Pine Street.

PARKE & LACY, General Agents, San Francisco, Cal. I, Onlo,
PRASER & CHALMERS, General Agents,
Chicago, Ill., and Denver, Col

1AMES LEFFELS

DENVER OFFICE: No. 248 Elghteenth Street, Denver, Colorado.

or 110 Liberty St., New York

TRAMWAYS,

ENCINES'

MIKE ROPE

HALLIDIE'S

HOISTING

653 and 655 Mission st., san Francisco, Cal.

## THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

RULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

American Exchange Hotel,



OHAS. & WM. MONTGOMERY, Prop'rs.

#### SHAREHOLDERS' DIRECTORY MINING

	ESSMENT			
SOTENTIFIC PERSS AND OTHER S. F. JOUENALS.	сиа экгили в	A DVRRTIRMENTS IN	MORY YAGSRUHT	COMPLEED BYERY

1909   1909	91 40 4	UI	48 viemoninoM 826	W Letts Oliver.	Rhave M	Paradise Valley M Co
Moth On Norder S. D.   Moth On Norder S. D.   Moth On S. Det S. D.   Moth On	Ct Commerce	96		E H Willson		Ептека Сод М Со
Heate & Belcher & Mo		01		T Wetzel	Oaliformiao	Do bec Blue Gravel M C
Hotel Corn M Co.   German S.   Gold St.				A W Havens	sbaveMo	Oon California & Va M C
Hotel Corn M Co.   Meyed. 32   6.0   10.0	PAYABLE	THUOMA .	ORRIGE IN S. F	SECRETARY.	LOCATION.	MAME OF COMPANY,
Hotel Con Money   Meyed   Money   Meyed   Money   Mo		'SHINO	M SERBER MITTEL	AA COCT NEW COTT	ATCT FORT TOTAL	~ ~~
Secondario (1906)   According (1907)   According	7T 420 '''	'TENTRATE'''	THE COURT PARTY COLUMN	M SUNDUI	VICE DISSIPALI	
10			18 viamo innif 608.	H Deas	ShaveM	
100   100	11 100 ·····	. isound	42 viemostaoM 885	Morizio L	ai.rofilsD	
Second   S	DT 100	ISDBOA	St. Vicinio Satisfactor coc	C H Willson	shavaM	
Sepand   S						
Stamony now, 808	davd z	strmanM.	W S NI WOIWWO	SECRETARY.	LOCATION.	MAME OF COMPANY.
## Quanting 1000, 000, 000 and			CO BE HEID.	MEETINGS 7	T T	
## Yessanony ## House	38 Montgomery 8t	Bunker6	Oct 10 Oct 29 F R.	's adager'sn .	. Co., Camora, 3,	M of the chiese of the entire section
Second 2016		Bretman	M W''OT ADAT''''OT 000		".I SIMUZITA	V LODIS W
Second   S	48 vismonanoM 3	Онау 40	M C. OS VOW I WOW	., 75 aqs8co .	California., 4.,	VIERTURA CTECK HAG M CO
Second 2016   Second 30   Se			C L ef 350 82 Just	SS 20 A . OI	.alsbsvaM	Trojan M Co
## Qeanony and Work   20, 20, 20, 20, 20, 20, 20, 20, 20, 20,	48 algrobileD 60g.			. 10. Aug 29	. Z ADBYS VI OU	South Comstock Con the
## Qeanony 1004	18 grantos noM 8			, 81 guAds .	.08sbsvsM	Sierra Mevada M Co
Ryamony   Cond.   St.	SE Transparent of			., 8 4q920d .	.ea .abavaM	Savage M Co
Ryamong now   Conditions   Co	on Tramogration of		M A 81 VOM 72 450		Arizona	Peerless M Co
Ryamony 1004   Meyed   22   40   40   41   40   41   41   41   41				. 52 MIA 0d	82 abeveV	Potosi M Go.
Stamony and Co.   Neward. 22   St. May 24   Oct. 25   C. W. St. St. St. St. St. St. St. St. St. St			T 23 12 40 08 40 18		£d. abayaM	Overman S M Co
25   26   27   27   27   27   27   27   27	Se montgomery de				T sbaysM	North Bonanza M Co.
Ryamony 2004   O.   Meyada 22   B. Ang 24, Oct 24 of 27   C. 25 of 26   Mon 5 and 18	39 Montgomery St		A FI'IT ADAT''''OF SOO		85 giggotile?	of) M (avart) rawoltyalf
18   Yasmoy 300 M (06)   Associated   25 st 50, but 8 d.   25 st 50, but 9 d.   25 st 50 d.   25 s	38 ani4 738	FOCKESS			19 signofile?	OD M OUNT
Particle	32 Montgomery St		W.T. 61 AONT 61 100		" " " " " " " " " " " " " " " " " " "	TITTO A PLIC THE THE CALL
10   10   10   10   10   10   10   10		; Kelley	OCC 8 OCC 27 . K E		GE. BDBYSPL	M format Hind Act avid
Ryamonyanok   20, 20, 20, 20, 20, 20, 20, 20, 20, 20,	22 Montgomery St	G	Dept 19 Oct 10, T. V		.csidionas	Gray ragge in Co
20	38 eniq 088	Lucy	Oct IINOV 8.,FE	3 1095cl	"6 BIRTOTHEC	Con racine in Co
Ryamony 1006   100   1	38 aniq egg.	McCoy	Oc. 10 Oct 27., C L	3 dept cs .	.PZRDSVS.VA.	CON IMPERIAL M CO
18 tymong 100M 696. 310 Hiz 3 D, 25 JJO, 2 JJO, 25 JJO, 25 JJO, 25 JJO, 25 JJO, 25 JJO, 20 M 100J add A 100 His 2 His tymong 100M 690. 100 His 3 JJO, 25 JJO,	48 viamoutnohi eu			.SS 30.A., UG	. S. , &bayevi	Choller M Co
Berger   M. Co.   Merada   22   60. Aug   42   42   44   44   44   44   44   4				32 MUA01	.alifornia, .26.	Champion M Co
A plan 4 Con M CO				.dI dask0d	,55abaveVi	
Apple Con M CoNevada. 22. 50. Aug. 22. Oct. 4 O.t. 25. CE Elliott 309 Montgomery 30 Bodie Con M Co 309 Montgomery 30 Bodie Con M Co	48 gramostnoM 60		Sept 30 0c tqeR	62 nrA 0d	Mevada, 38,	
of the state of th	36 CIPITOSOROWI CO		Sept 16 Oct 21 G V	.21 MuA03	California., 7.	Bodie Con M Co
	38 vismostnoM 80				.SSBbsvsM	Alpha Con M Co
. a a or o o o tare 3 to a bound of Ma sound						Andes S M Co
COMPANY, LOOATION, NO. AM'T, LEVIED, DELING'NT, SALE, SECRETARE, PLACE OF BUSINES	STATISTING NO SDA.	GRORETARY. Pr	DELING'NT. SALE.	GHIYAL LEVIED	LOOATION, NO.	COMPANY,
ASTERNENTS,			SMENTS.	ASSESS		
COMPLEM EVERY TRUEBLAY PROM ADVERTIBREBRYS IN MINING AND SCIENTIFIC PRESS AND OTHER S. F. JODENALS.	F. JODENALS.	ERSS AND OTHER S.			MENUE MONT TAND	MARK - 100 -

THURBDAY Oct., 6, 1887.   1'(0 lows.		.пg.ө.		Abots .	A .8
	ENDING MEEE				TO ME OF
255 Belcher 550 200 N. Belle Is	. Oct. 6.	.ca ,44ec	TOT TOTAL	Bept. 15.	OMPANY,

BORAX-San Bernardino 710 8	09 00			09	Galedonia
- b) 46ANTINOMY-French Star	08.I	64 6.2	0014 0919		Confidence
THURSDAY, Oct. 6, 1887.	37.8 09.8 0			00.8 00.£	Chollat
WHOLESALE,	34.3 00.60	0 0 00 0	30.0	00.3 05.1	Ohampion
4776410114	03.2 66.16	8.E 09.E	01.2 00.1	09.2 00.8	
"AOU TOTAL TRACOUR ADDRESS TO CO		SI ZDI	PLE BEE		Con. Vs. & Cal
San Francisco Metal Market.				31.I 00,1	Вијжег
					Bodie Tunnel
550 Hale & Mor 4.25 500 Yellow Jacket 5.75	3, 00 4, 45			06.8 08.8	Benton
410 Gould & Curry4.80 620 Utah				01.2 00.1	Bodie Con
03. 8. добраба 1. 1. 40 40 бр. 1 3.50	08. 87. 8	7, 09.	67, 09,	67, 07,	Belle Isle
10 Eureka Con7 450 Silver Hill. 400	01.65 2.00	6' 06'		00'I 96'	Baltimore
60 Confidence. 85 250 Sierra Merada. 205 250 Storpion 205 Crocker. 206 300 Scorpion 205 Crocker.	64.70 74 00.2 65,10			6,56 6,79 1,16 1,90	BullionBelcher
	34. UP.	V V 04 6		30 3 03 3	Brophy
o51 Roing P. Sheridan Point. 150 Georges of 160 T. Sheridan 161 Georges of	\$9 ng*t na	4.10 4.4	uc.c uc.r	00.7 40	Belcher
Tool Con Va & Cal 18 110 Peerless 195 Con Va A Cal.	29 09°t 0		3-1 00.7		Argents
03.6 isotot 051 43	61.20 1.50			06.£ 00.£	Andes
200 Eullion 1.95 500 Peer 650	08.2 00.2 01	0.2 68.1		2.25 2.40	A158
225 Benton Con4 It 650 Overman 170	93.8 00, № 08	3.52 3.6	3,30 3,75	37.4 OI.E	Alpha
190 Bodie					
460 Baltimore 1.00 200 Nev. Queen4.55	10 1000 I	to do or	term to diamon	100 to 30-	
So Monor a Beloher (1.25) Monor and		ENDING Sept. 29.	ENDING Bept. 22.	Bept. 15.	COMPANY,
		MEEK	MEEE	MEEE	TO EMAK
038	2442	2447	Add M	даады	AC ARVR
500 Alca. 2.50 300 Justice. 1.45					
THURSDAY Oct. 6, 1887. 1'0 IOWR.		.មន្ត្រាវ	RHOXA	Stock.	A .G
			0 40 11 11	400+0	GT Co
Sales at San Francisco Stock Exchange.	ai sols?	180A	aiH bo	more of	Table of Lor
			,		

	(20) 9	8								ka old	Be H
-	(a) d	0.1	****	****			*****	****		KB, 116W	BRIT
-	9 9	ň	F				* * "318'8	H 9072	ACT-H	COBJ	Chion
55	1 00) 0	1 6						*****		DHOD	BUL
09	2009	1 9							*******	ATE-	TIMIT
ÞΙ	e 0								******	O & rol	FERNT
P P	S 1	4								hinery.	TOM
9	27									Vinnid	26M
9	<b>W</b> 17										Tola
	<b>29</b> 48		*****			86	sis VI	artbro	iond, c	k Diam	Blac
52	<b>(2)</b> 9	T							ar, asi	[BUH-	STEEL
	&@@@@@ 20000	8	*****	• • •						led, do	CPI
	<b>@</b> 0	n z	*****					*****	*****	K, de Da	RITCH
-	Ø ŏ	e T	-2ma	£ "	DIO.		AND DANK	c tro %	מתב זה'	Pig.	OUR
-	Ø 8			014			******				OTT C
	9 00 9	e 0								******	TREE
02	9 0 0	0 3								S	204
	Ø 0	0 5								ald	GAS.I
	Ø 0	U S	8							oN at	lod 8
	_@ 0	2 2	3					******	White	fon Pig Lane oV ,ata	CPT2
00	0 (423	0 I	6				******		" ton"	giA nos	191O
00	980) -	-	*****	••••			., aot	10' I'	J 'HOS	nton, t	mA.
90	6200 -	-		••••		***	*****		ao	a 'uoqu	ग्रह्म
09	- (635	-		***			******	TOU B	BUTOO	ी प्रभाश	IFON-
18	(e) 6		****	• • • •					. graan	RUX	BJEG
134	<b>@</b> ₹?.		****	***						Box	But
	<b>8</b> 9 6								*****	·Suidar	າລກະລ
12	Ø 6		*****								Bolt
	60										GOPP
19	@ 9										
	200									480380	ris A
8	(A) 47		4000)				0	uibra	шэЯ с	-XNOR	BORA
	Ø) §6						76	at B do	<u>пэчЯ</u> -	-YKOK	ITNA
-2	P 128	'20	0 '83	TOR	HOR	T					

### Complimentary Samples. Shoet, 7x3 ft, 7 to 10 fb, less the cask...... 8 @ 9

Persons receiving this paper marked are requested to examine its contents, terms o subquested to examine its contents, terms of such give it their own patronage, and seription, and give it their own patronal times in the more widely known to others, and extending its influence in the cause it taithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

#### Don't Fail to Write,

THE relative cost of lifting water from mines by steam and Cornish plunger pumps, is to be beeted at the Little Mismi share at Lesdville, where several large steam pumps have lately been placed at quite a depth. The test will be made by competent parties, and will consist of the water evaporated in the boliers in litting a certain number of gallons a collers in litting a certain number of gallons a positive.

Its most parts of the United States, and in Colorado sepecially, the miner who is so fortunate as as to develop a good ore-body has a property which will at once bring him handsome error united. He can sell his ore on the dump, or employ teameters to hearl it to a railway and sinp it to public samplers, or direct to smelters of the control of the co

	String	zollo <b>î</b>	ęрe	əviz	д цз	Oct.	peted	p səə			ergələT HoY wəM
			10	8Tk	W	etal	M :	aro'	X	WeM	, 1
	9*20	€.30			06,4		09.8	29	100		Yellow Ja
ı	09.2	SP'L	01 T	1,30	SP I	35.1		01 I			Uta1
ı	3,60	08 3	2.70	02.2	3,00	09.2	3 40	3.20			On notal
ı					02.		02,	čľ.			Syndicate
ı	39.	66.	gg.	09,	09*	99.	04.	29"			Scorpion.
Ų	77	****	-7	*****	****	77	17				Silver Kin
K	OF,	• • • •	06.	cz.	68.	.30		08.			Silver Hil
B	097	9,40			3.80		4.20	3.90		Vada	Sierra Ne
ı					00.0	400	**.:	****		rex ····	Seg. Belch
ı	62.8	94.9	89	62,8	CZ . 1	0919	01.1	62.7			SAVAGE
ı	20.0	34 3		30.0	20.4	04 5	20.0	40.4			STIAGE SER

37.4 38.4 04.4 32.4 33.4 31.4 03.4 04.4 82.1 01.1 82.1 81.1 82.1 02.1 04.1 88 1 82.6 87.8 §8 03.7 §8 00.7 03 7 39. \$\cdot 00. \$\text{1} \quad \text{1} \quad \text{1} \quad \text{2} \quad \quad \text{2} \quad \text{2} \quad \text{2} \quad \text{2} \quad

03.1 02.1 31,1 30.1 08,1 01,1 03,1 03,1

87.8 09.8 08.8 08.8 45 45 82.8 00.8 08.4 00.7 08.8

sel Reduction & M Co....California. J Moratio.
se King M Co....Artsona. J Mash...
Transisco Copper M Co...California. F E Berler.

Bar Silver—96½° pet 02, Borax—5½°66%° Copper-Lare—910 65©10,70, Irox—10, 1, \$22 00, Laro—94, 60©4,10, Laromenter—638©546,

Lean—West—State of the control of th

A. Wilsow of Mimshew has sold the Oro Fino mine, adjoining the Cole claim on Big. Butte (Butte 0.0.), to an Eastern company be. In Edura, he should be supply be. Gravel Minng Company, and reported to be a rich company with plenty of capital to back it. It is now paying \$200,000 a month in dividends,

This invention relates to the class of refrigera-tors for the preservation of perishable material, and consists in a peculiar construction and com-bination of devices.

#### "Black Sand" as an Industry.

EDITORS PERSS:—Since the appearance of my article, published in the Mining And Solky.

THEO PERSS some weeks ago, on the subject of dold in the black sand what might be produced from it, I have received from a number of parties letters, showing the amounts that they could be gathered from their respective properties. So flattering have been the respective properties on sands I have investigated, that I article state on sands I have investigated, that I article lettering have been the respective properties. So flattering have been the respective properties on sands I have investigated, that I can table industry. There seem to be two observing and especially in the winter months, a prolection for the sands, after they are gathered. To we to collection and extraction of gold can be made consumply matter, and both the collection and extraction of gold can be made configurable.

To me, this is a simple matter, and both the collection and extraction of gold can be made comparably in the last in the way in the waying drift or hydraulic for operating and paying drift or hydraulic washings.

Yallo will run less than the drift or hydraulic washings.

Some may say, If they are so good, why don't washings.

Some may say, If they are so good, why don't and some may say, If they are so good, why don't are some and and so we have don't are so good, why don't are some may say. If they are so good, why don't are the sour so good, why don't are so good, why don't a

washings.
Some may say. If they are so good, why don't I take hold of it? I will snewer this by sayings.
I have my hands the list sheady, and cannot spare the time, besides, I do not own in any hydranlic or drift mine or river claim. There is one the time, besides, I do not own in any hydranlic or drift mine or river claim. There is one thing I can do—instruct him, and he can I will select a party, instruct him, and he can but keep energy instruct him, and he can but keep not be so and select any late the necessary works in shape. The fact is here are millions of dollars locked up in the hole of this State, to say nothing shout late an emillions of dollars locked up in the an industry that will give employment to khous an industry that will give employment to khous and action the per ton in gold I have extracted from them. Altarial B. Paul., tracked from them.

### Mining Share Market.

While the stock market here continues dull and uninteresting, affairs in the Comstock are full of interest. Both the California battery and pan-mills were shut down a few days since,

and pan-mills were shut down a few days since, and pan-mills were shut down a few days since, to arrange for the water-power. As soon as the connections are made, in a few days, the entire complement of 80 stamps in the mill will be all will will be activated a complement of 80 stamps in the mill will be weekly bullion output from the mine will the weekly bullion output from the mine of \$108,000, makes the fenth consecutive mouthly dividend declared aince of \$108,000, makes the tenth or nearly \$100,000. The last force monthly dividend declared aince of \$108,000, makes the tenth or nearly \$100,000. The share the fenth of the share of the state of the state of the share of the share of the share of the share of the payment for the next two years, and, if the area of ore is alleyed of a suspension of the payment for the next two years, and, if the area of one of regular monthly dividends by the company of regular monthly dividends by the company of regular monthly dividends by the company of regular monthly dividends by the strength of the next the same of the old. The recent recent of the strength of a strength of the new strength of a strength of the new strength of a strength of the old. The recent strength of the strength

### Bullion Shipments.

We quote shipments since our last, and shall be pleased to receive further reports:

Eureka Consolidated, Oct. 1, \$15,000; Handucka Consolidated, Oct. 1, \$15,000; Handucka Consolidated, Oct. 1, \$15,000; Handucka Cormania, 30, \$1212; Germania, 30, \$4862; Queen of the Hills, Oct. 1, \$1078; Germania, 1, \$1461; Handucka Cormania, 1, \$1400; Germania, 2, \$3100; Bannock, 1, \$1700; Germania, 2, \$3124.

Our Agente.

Our Peirans can do much in aid of our paper and the cases of practical knowledge and science, by assisting Agente it fair hear halore of caravesing, by lending their influence and encouraging lavors. We intend to send one out worthy men.

LARED C. HOAG—Celifornia.

G. W. HOALLS—Altgona.

G. W. HOALLS—Altgona.

W. J. FERRALM—UTER.

WILLIAM FOOL—FREEDO.

WILLIAM FOOL—FREEDO.

WILLIAM FOOL—FREEDO.

SILAE PRUPEW—COlues Co.

S. E. E. —RAILWAY SWITCH, ETC.—C. S. Drake, FOR WEEK ENDING SEPTEMBER 27, 1887, 370,591.—REFRICERATOR—I. Allegreni, West Berkeley, Cal 370,592.—VENTILATOR—I. Allegreni, West 370,583.—Book ATTACHMENT—A. Bieber, Bieber, Cal 370,593.—Book ATTACHMENT—A. Bieber, Bieber, Cal 370,593.—Bott Vell.

370,661.—Saw Jointer—J. H. Sodee, Seattle, S. F. Hastinge Machine—E. D. Hastinges, Patches, W. T. Patches, W. T. T. P. H. Jackson, S. F. E. McCariby, P. H. Jackson, S. F. Marble—E. McCariby, Sacrimento.

Work.—Opples of U. S. and Foreign Petents furnished by Dwars & Co., in the shortest faire possible (by mall by Dwars & Co., in the shortest and Foreign patents to stelegraphic order). American and Foreign patent before beauties for Facilio Coast inventors transacted with perfect security, at resonable trates and in the shortest possible time. S70,512.-GRATE-E. W. Williams, S. F.

### Notices of Recent Patents.

Dewey & Co.'s Sourntivio Prezs U. S. and Foreign Patent Agency, the following sre worthy of special mention:

Assa. Floor, Root, Root and Side walk Constructions. Among the patents recently obtained through

Proteign Pakent Agency, the following step foreign Pakent Agency, the following step worthy of special mention:

Worthy of special mention:

Worthy of special mention:

Area (Sept. 27, 1887, Mr. Jackson's latest in a floor, root and aldewalk construction relates to cartain improvements in area; floor, foot and aldewalk construction relates of aurtace of arthinial stone, concrete consists of aurtace of arthinial stone, concrete any thick a special mention in the present construction and plates of any thickness, with the present construction any thickness, and the proves of a corresponding to the order construction and plates of any thickness, with the growes of a corresponding to the order cores the corresponding to the construction as compared to the construction as construction is a construction as a construction as construction as construction as a construction as construction as construction as a construction to be constructed by the construction to be constructed by the construction as construction as constructed by the construction as constructed by the construction as construction as constructed by the construction and resist the obttom to the construction as constructed by the construction as constructed by the construction and resist the control of the construction as constructed by the construction a

gretti, West Barkeley. No. 370,592. Dated Restrict West Barkeley. No. 370,592. Dated Sept. W. 370,592. This invention relates to the class of air-purifiers, and consists in tubes or pipes fixed or adjustable with relation to each other and arranged the one within the other, and arranged the one within the season of the controlled apertures in said tubes or pipes, whereby and passages communicate with gives, whereby and passages communicate with each other, with the apartments

any....Location of principal piece of business, leon, California. Location of works, Dovil's og District, Storey and Lyon Counties, No-

South Comstock Consolidated Silver Min-

DELINQUENT NOTICE.

#### GREAT REDUCTION!

BATTERY SCREENS



#### PERFORATED SHEET METAL

slot Punched Screens. ns a specialty, from Me. I to 15 (fin

223 First St., San Francisco, JOHN W. QUICK, Proprietor. San Francisco Pioneer Screen Works.

AIR COMPRESSORS, CLAYTONCatalogue No.5, Jan I, 1887

Clayton Air Compressor Works, And General Mining Machinery For CATALOGUES, ESTIMATES, Etc., Address ROCK DRILLS,

### H. EVANS Office, 43 DEY ST., NEW YORK

68cot to THOMSON & EVAUS),

**WACH: NE WORKS** 

STEAM FUMPS, STEAM ENGINES

Manufacturing Purposes. Laboratory NEM LORK No. 25 Bond St. H. M. RAYNOR

Practical Treatise on Hydraulic Mining. Mative Platinum and Serap purchased

### MINERS WANTED.

outry.

Wages are \$2.50 to \$2.75 per day, with prompt paynear every mouth. These towns are easily reached by
tage from Keno, Oroville or Chrco.

S. D. PRRNTISS. Good Quartz Miners can find steady employment at towns of Creecont Mills and Greenville, in Plumas

Greenville, Cal.

Mechanical Photographers, RUNNELS & STATELER,

957 Market St., San Francisco VIEWS OF

Machinery, Models and Buildings

BUSINESS SCENESS SCENE

SHORT-HAND

Taught thoroughly by mail. Send for checklar, MISS BARRETT, MOSS BARRETT, R. F. Rooms 7 & 8, 240 Montgomery St., S. F.

## ELECTRIC DEVELOPMENT COMPANY.

## ethgid oirtoelff ork & tneosebnsonl

mission of power, either direct or with storage Batteries,

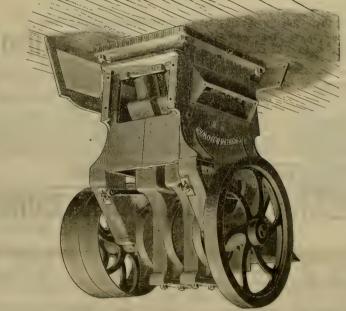
For Mines, Hoisting Works, Mills, Reduction Works,

### EDISON INCANDESCENT LIGHT,

m. Lights require no attention and are under compression; invaluable to contractors and others to w

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

STAMP MILL DOORFE "ECONOMIC"



We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 lbs, each) of our stamps, and the rapidity (300 strokes each per minute) with which they rep. There are 4 shoes in each stamp, so any other are 4 shoes of the shee since on the dies per minute. Less power is required than in that there are 4800 strokes of the shoes on the dies per minute. Less power is required than in The Morter has screens at both ends, giving ample discharge. There are no came or tappets to wear or the adjusted. The stamps adjust themselves as the shoes west.

FEEDER AN AUTOMATIC ORE

## Goes with each Mill, We also have a suitable

#### Breaker. ROCK

Several Mills are now in the mines doing excellent work. The 'Economic" is not only a mill for small mines, but we believe it is destined to superezer the old stamp in mills of the laterest caracter.

TATUM & BOWEN,

SAN FRANCISCO, CAL 34 and 36 FREMOUT STREET,

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc.

No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.

-MANUFACTURERS OF

NILKO GTAGERINE

("DYNAMITE" or "GIANT")

Blasting Powders.

TOR REMOVING STUMPS A Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager.

## THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

Of Different Strengths as Required. CIVAL SOMDER OF DYNAMITE

10DSON POWDER IMPROVED. GETVLIUE-DANVMILE, Stronger than Dynamite and even Safer in Handling.

NOBEL'S EXPLOSIVE GELATUE," which contenns 94 per cent of Witro-Glycorine, and

FOR RAILROADS AND LAND CLEARING. Is from three to four times etronger than ordinary Blast-ng Powder, and is used by all the Eadroads and Gravel Claims, as it breaks more ground, pulverizes better and aves time and money. It is as dry as the ordinary Blasting Powder and rums as freely.

CAPS and FUSE for Sale. BYNDMANN, NIELSEN & CO.,

GENERAL AGENTS, SAN FRANCISCO, CAL.

Lating of Gold and Shives Ores (Second Edition) and the Extraction of their Respective Metals without indecided by the Shives of Second Edition of their Respective Metals without indecided by the restance of gold and silver ore four foundations of their special principles of their

BY GUIDO KUSTEL, M. E.

Books on Working Ores.

The Pilot Peak Mine, conteining 300 sores of mining and, attacked near Pilot Peak in Slevra and Jountieced near Pilot Peak in Slevra and Jountiece, california, will be sold to \$16,000, or half this control of the color of the

Placer Mine for Sale.

DANIEL BOLAND, Sec'y Pilot Peak M. Co., Gibsonville P. O., Slerr's Co., Oel.



220 MARKET.ST.S.F.

## Iton and Machine Works:

CALIFORNIA MACHINE WORKS, W. 119 Beale St., - San Francisco, W. H. BIRCH & CO., San Francisco, S

Steam Engines, Flour Mill, and Mining, Saw Mill and Dredging Machin

Brodle Rock Crushers,
Steam Power, Hydraulic,
Side Walk and Hand-Po

Manulachurers of B. E. Henrickson's Patent Automatic Safety Catches for Elevators. All kinds of machinory made and repaired. AS Orders Souldweb. ELEVATORS.

### Golden State & Miners Iron Works.

Merufacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

STEVENSON'S PATENT

### Mold-Board AMALGAMATORS,

THE SE, DETWEED HOWERD & FOISOM, B'18 Golden State Pressure Blowers.

#### SAORAMENTO, OAL. UNION IRON WORKS,

ROOT, NEILSON & CO.,

Engines, Boilers, Steam

MACHINERY FOR MINING PURPOSES,

Sacramento, Cal. Front St., bet. N & O Sta., Flouring Mills, Sav Mills and Quartz Mills. Machinery constructed, fitted up and repaired. Front St.. bet. N & O Sts... Sacramento. Cel.

THOMPSON BROTHERS,

### EUREKA FOUNDRY

1.29 and 131 Reale St., between Mission and Howard, S.F.

AVILLARMS. Correspondence solicited.
ANDE'RS OF GENERAL MACHINERY, Special aftendion given to Woodworking Machinery, and Gas Engines. Correspondence solicited.

### MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

MINING EXPERT AND GEOLOGIST.

ROSS E. BROWNE,

No. 307 SAUSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

### SAW COMPANY N. W. SPAULDING

SPAULDING'S

hiserted Tooth

CIRCULAR CHISEL BIT

SWES 10,18,83

GAW MILLS AND MACHINERY

28 188 X



THE RUSSELL PROCESS COMP'Y. ornia Perforating Screen Co., 145 & 147 Beale St., S. F.

'ഒറു, അരാജ NEW YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President.

### SHIPPING AND COMMISSION MERCHANTS, JAHW∃N

809 and 311 Sansome Street, San Francisco, Gal.

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products.

General Insurance Agents.

Have correspondents in all the chief eities of the United States, Europe, Australia, India, China and the principal islands of the Pacific. Furchase goods and sell California products in those countries.

General Agents for the Pecific Cosst of WATIOWAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass.

## PACIFIC ROLLING MILL CO.

# Castings and

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought Iron in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

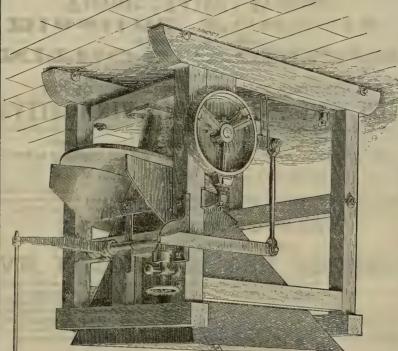
ALSO Steel Rods, from \$ to 5 inch diameter and Flats from I to 8 inch. Angles, Tees, Channels and other shape Steel Rods, from \$ to 5 inch diameter and Bachinery and Steel Shape Steel Shape Steel Shape Steel Shape Steel Flats and Alerenary and Bachinery and Thirs from 12 To 45 pounds per yard. ALSO, Railroad and Merchanz I tron, Red Becams, Angle, Instance, and I tron, Endergo and Merchaners, Steembeat Shapes, Cranks, Pistons, Oonnecking Rods, etc. Car and Locomother, Akse and Frames, and Brites; Cranks, Iron and Steel Shapes Steembeat Steembeat Steembeat Steembeat Steembeat Shapes Steembeat Steembe

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL,

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

## 10SHOA HENDY MACHINE WORKS

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



"CHALLENGE" IMPROVED ORE PREDER.

superior to any form of "Roller" Feeder manufactured. We refer to the follow-ing gentlemen who have furnished us with testimonial letters to the above effect, which can be seen at our office, viz.: est form of Feeder ever devised, and pronounced by reputable mining men to be far

N. W. CROCKER, Supt. Bunker Hill Gold Mining Co., Amador City, Cal.
ing Co., Amador City, Cal.
W. G. Roberer, Greenwood, El Dorado Co., Cal.
ing Co., Amador City, Cal.
And many others, and we are prepared to furnish either the
"CHALLENGE," "STANFORD," "TULLOCK," Of "ROLLER" FEEDERS,
"CHALLENGE," "STANFORD," "TULLOCK," Of "ROLLER" FEEDERS,
"CHALLENGE," "STANFORD," "TULLOCK," Of "ROLLER"

And will furnish descriptive Oatalogues and copies of Testimonial Letters, and will furnish descriptive optices upon application.

IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS. MHEELS CHILLED CAR

MEDAL, AWARDED, MECHANICS' FAIR.

STEIGER & KERR,

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

HAS. E. STEIGEE.

MINING MEN' NOTICE TO

ENCINEERS' CONTRACTORS,

TUNNELING, SHAFT-SINKING, ETC. and others interested in

Engineers' Tables of Progress

WITH MAPS, ILLUSTRATIONS

AND FULL DESCRIPTION OF THE

# NEM LOBK

Section 16x16 feet; Length 36 miles.

THIRD EDITION NOW READY. SEUT FREE OU APPLICATION

For Catalogues, Estimates, Etc. address

INCERSOLL ROCK DRILL CO.

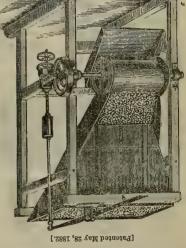
REPRESENTED BY

PARKE & LACY

8 California St., and 21 Fremont St

SAN PRANCISCO, CAL.

## THE ROLLER ORE FEEDER



rin obest and obsepose Ore Peeder now in use fewor parts, requires less power, is simpler in at than any other. Peeds coarse ore or self else, courtly, under one or all the stamps in a battery ed.

To the Burner Hill Mill it has run continuously for two sars, never having been out of order or costing a dollar repaire

Golden State and Miners' Iron Works.

S27 First Street, San Francisco, Cal Sole Manufacturers,

M'S'KEILH

Keith's Electric Dynamos

MOTORS, LAMPS

miectric Kaliways, and Apparatus for the Storage Batteries.

Electric Transmission of Power.

Dynamos and Motors of all sizes for Conveying Power from Waterfalls for use in Mines and Mills, erected under gravanty of performance.

Office, 40 Meyada Block,



This paper is printed with Ink Manufac-tured by Charles Eneu Johnson & Oo., 500 South Joth St., Philadelphia. Branch Offi-ces—47 Rose St., New York, and 40 La Salle Obicago. Agent for the Pacific Oesst— Obicago. Agent for the Pacific St., S.F.

(\$212.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1600 ARE NOW IN USE. Cogenitations are clear from the first working. The west and test of the first course of the second in working order and ready to make tests at 230 Fremout Street, San Francisco.

THE MONTANA COMPANY (Limited) DEAR SIRES:—Having tosted three of your Frue Acanons in a compeditive of tal with other similar machine (Triumph), we have suching tosted three of the superiority of your Vanners, as is evidenced by the fact of our havin ordered twenty must of your unachines for immediate delivery. Yours truly,

Protocted by patents May 4, 1869; December 22, 1874; September 2, 1870; April 27, 1880; March 22, 1831; Fobru-ary 30, 1885; September 18, 1883. Patents applied for. N. E.—Since the above was written the 50 Variners having been started gave such satisfaction that 44 addi

Room 7, No. 109 California Street, SAN FRANCISCO, CAL. ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OR VANNING MACHINE, THE FRUE ORE CONCENTRATOR

## (00'0995) FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the colebrated "Triumer" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their frames being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built as compactly as their requisite strength will permit, weigh less, regaines as for motion when operated. They are built as compactly as their requisite strength will permit, weigh less, the quire less freight space in boxes, by which their their teams and county less mill room when set up.

An important improvement has recently been introduced into their construction, which consists of a kirwitz Park. Plark, placed in front of and which takes the discharge from the feed and amplies to an introduced into the shaking frame to which the table is attacted to this table by the longitudinal motion of the shaking frame to which the table is attacted when the imparted to this table by the longitudinal motion of the shaking frame to which the table is attacted we have at hand many testimonials, from well-known Superintenders of mines in different mining districts of the United States, bearing evidence of the efficiency and superiority of this form of Concentrator, and we shall be pleased to send Circulars covering such letters of testimony, as well, directions for setting up and operating these and are ready to quote special prices are are as a such superiority of the stable by the case of motion and appearable order.

JOSHUA HENDY MACHINE WORKS,

Nos. 39 to 51 Fremont St.,

ORE CONCENTRATOR

FOR SAVING COLD

IN QUARTZ, GRAVEL, OR PLACER MINES. MADE OF BEST SOFT LAKE SUPERIOR COPPER

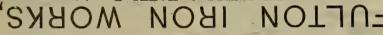
CIANTS.

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

FURNISHED ON APPLICATION.

SAN FRANCISCO NOVELTY AND PLATING WORKS

No. 108 FIRST STREET.



HINOKLEY, SPIERS & HAYES, Proprietors.

San Francisco.

HYDRO-CARBON ASSAY FURNACES, Agent for HOSKINS'

BATTERY SCREEUS AND WIRE CLOTH

Assayers' and Miving Material.

521 & 523 Market St., San Francisco,

JUSTINIAN CAIRE, Agent,

MOTICE.—All our plates are guaranteed to bave the full weight of silver agreed upon, and are feeted be fore leaving our works, thereby avolding the complaints about light weight, made so often before we started in this branch of industry.

San Francisco, Cal.

Office, 230 Fremont St., (ESTABLISHED IN 1865.)

-WANDVACTURERS OF-

Propeller Engines, either H Stern or Side-wheel Engines, MARINE ENGINES AND BOILERS. ropeller Engines, cither High Pressure or Compoun

MINING MACHINERY.—Hoisting Engines and Works, Cagos, Ore Buckets, Ore Care, Fumping Engines and Fumps, Water Buckets, Fump Columns, Air Compressors, Air Receivers, Air Phys.

MILL MACHINERY.—Batteries for Dry or Web Crushing, Amalgamating Paus, Settl. 12, Furnaces, Reforts, Concentrators, Ove Feeders, Rock Breakers, Furnaces for Reducing Ores, Water Jackets, etc.

MISCELLLANEOUS MACHINERY.—Flour Mil Machinery, Saw Mill Engines and Sollers, Dredging Machinery, Fowder Mill Machinery, Water Wheels.

MORKS ORE WET OR DRY. Tustin's Pulverizer



**ENGINES** BOI

Either for use on Steamboats or for use on Land.

AHT FOR TEACO DIVIDAG BHT ROY STREET Water Pipe, Fump or Air Columns, Fish Tanks for Salmon Canneries ov syster description.

Bollet Repeirs Fromptly ettended to and at very moderate raises.

Deane Steam Fump. September:

DEWEY & CO., | BIG MARKET ST. | PATENT AGENTS.

**0**E

FORM

CHL



shove cut illustrates the IMPROVED FORM OF HYDRAULIC GIANTS, which we is a fall similar styles are intringenents upon this form, and s judgment stands of record to that offect, on of ludge sawyer of the U.S. Circuit Court in the matter of Hondy and Fisher vs. R. Hoskin et als stores furnished upon application to

JOSHUA HENDY MACHINE WORKS, 89 to 51 Fremont St., San Francisco, Cal

HYDRAULIC

IMPROVED This cut represents our

MACHINE, HYDRAULIC

TT DIFFERS FROM THE O.D STYLE IN HAVING ONLY ONE JOINT freekes of two. It is of greeker expectly and movered and when the construction of the contribute of the result of the construction of the contribute purchased to by the construction of the contribute purchased to by him, is carried up on appearable to the Suprement of the contribute the contribute of a reversal in our favor. Miners and including purchasers are heavy to cliently as will prosecute to the inliest excess the construction of the contribute of the construction of the contribute of the contrib

IMPROVED

"TRIUMPH"

SPECIALTIES:

Corliss Engines and Trastin Ore Pulverizers.

Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater.

PORTLAND, OREGON.

SAN FRANCISCO, CAL,

SALT LAKE CITY, UTAH,



Machinery

PARKE

NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and Iron Working

NOTJEZA

A NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

Spring Valley Water Works, S. F. 1, 200 H. P. Sterr & Co. Mills, Wheatport.... 1 100 H. P. Ben Jose & Santa Clara Electric R. Co., S. F. 1, 75 H. P. Selby Smelting Works, Vallejo

California Cotton Mills, East Oak

Jan Glay Smelting Works, Vallejo

La Luz Mining Company,

Junction... 1 150 H. P. Selby Smelting Works, Vallejo

La Luz Mining Company Central

Jan Glay Smelting Works, Vallejo

La Luz Mining Company Central

Jan Glay Smelting Works, Vallejo

Jan Glay Smelting Company Central

America

America

America

America The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

BANKIN, BRAYTON &

MINING WYCHINERY,

HEINE SAFETY

San Francisco, Cal. PACIFIC IRON WORKS

L. R. MEAD, Secretary. R. S. MOORE, Superintendent,

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SVEELX'

DURABILITY, ECONOMY,

AND FACILITY OF INSPECTION and REPAIRS.

.еви пі wоп темоч евтоН 000,06

Guaranteed More Efficient than any other Boiler made. Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueber Bros. & Co., California Jute Mills, and other places.

WIEGALS TRIEST WOULERS of all descriptions.

SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarifiers, Double Effects, etc.

STEAM BOULERS of all descriptions.

STEAM HOLLERY—Sugar Mills, Vacuum Pans, Clarifiers, Double Effects, etc.

Funders of 120-steam Pans, Cargo Winches, etc.

Mining Company.

Send for Circular and Price Lists. WILSON'S PATENT GAS-PRODUCER. REFRIGERATING MACHINERY for Steamships, Brewerles, and Cellars.

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Rossting Furnaces Mall kinds.

AIR COMPRESSORS—RESPORS—The Prove Department of the Completed order for 35 miles of 44-inch may be a few order or specialty. Work—Have just completed order for 35 miles of 44-inch prove the few order or specialty. Works—Company, San Francisco.

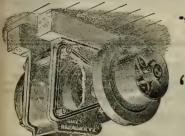
SAW-MILL MACHINES THE PIPE a Specialty. San Francisco.

SAW-MILL MACHINES OF The Pipe of the Colebrated "Heine" Petent Safety Boiler (Water Tube); and MANURACH ENGRAPHIC Corporation of the Celebrated "Heine" Petent Safety Boiler (Water Tube); and MACHERT STEEL-RIM PULLEYS—Fifty per oant lighter and 35 per oant cheaper than cast-from pulleys; will not break in transportation.

WATER TUBE

Manufacturers and Sole Agents for the Pacific Coast for

**BOILER**.



оке склянек

F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS, Centrifugal Koller ZIJEN?

Mining Machinery of Every Description,

Steam Engines and Shingle Machines.

SEND FOR CIRCULAR.

No. 45 FREMONT STREET, . . SAN FRANCISOO, CAL.



First Premium Awarded at Mechanics' Fair, 1884.

First Premium Awarded at Mechanics' Fair, 1884.

Solo Liscused Manufacturers of the MACHINERY MINING PERFECT PULLEYS

SLEVM ENGINES'

ARCHITECTURAL IRON WORK. Ice and Refrigerating Machines, Shafting, Pulleys, etc.

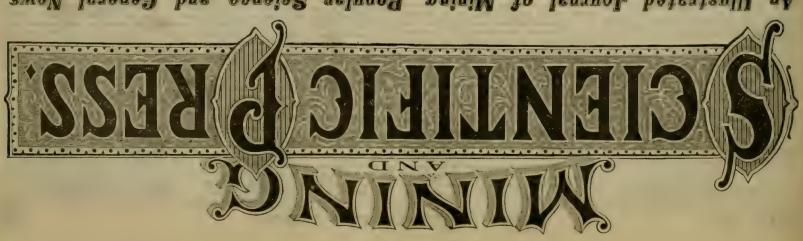
GENERAL MACHINE WORK.

Ban Francisco, Cal SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco.

SHAFTING, HANGERS AND APPURTENANCES

os. 129 & 131 Fremont Street,

Wedling miss higher Wrents in the belief



Number 16. BA DEMEA & CO. Illustrated Journal of Mining, Popular Science General News. pue

SAN FRANCISCO, SATURDAY, OCTOBER 15, 1887.

ployment, he has the selection of the best me. which cannot be found in the factory towns of changes in Europe, This system comprehends the advantages to be found in model indus.

The cottage of the American factory opera-

number in this country, but they are increasing country. It is most gratifying to know that to the cottage of the workingman of any other

this is the course of progress. in influence. In all the leading factory towns the individual homes are not laurivibut of tive, when he sees fit to occupy one, is superior

three-story blocks, situated in colonies just out.

one of the styles of modern cottages built by side the towns. For \$100 per year, one can ob-tain a most excellent tenement of seven large Conn. With each cottage is quite a garden of The plates we give on this page represent

RTOOK TROOMS LIBSI Unfinished\_Attic

placed side by side. The company has a large located in such a way as to exhibit variety of styles; that is, two of like architecture are never rooms, cellar, garden, etc. The houses in the several thousand feet of land. The rent is colonies are owned by Herr Krupp; in fact, be from \$60 to \$125 per year. These houses are OPERATIVE'S HOUSE AT WILLIMANTIO FACTORIES.

workingmen's homes used in this country. number of these houses occupied by operators and overseers. The cuts show the front and

They report having found magnetic iron ore, ing the west slope of the Cascade mountains. THE Puget Sound people have been prospect-These are given as a type of the detached side elevations, and the plans of the two floors,

are situated in the Snoqualmic pass. marble and silver. These locations are four miles northwest of the Denny iron mines, which

ove is said to average from \$22 to \$64 per ton

enlarge and extend the system for power for the mines and irrigation. W. B. Bourn of San the Grass Valley Water Company's ditch to A LARGE force of workmen has been put on The claims are not very far from the railroad.

Among the most anbstantial houses for work-ingp, in When the operative of this country steps and extend the system for of the boarding or the tenement-house, he the mines and irrigation. W. B. Bourn of Resen, Rhenish Prussia, By his system of sm-

wood cottage of America cannot be found. brick, as the locality may afford, and the neat Britain and on the continent are of stone or

It may be stated that the houses in Great the single men is on the barrack plan. its name, are laid out with parks, schools, ohurohes, supply stores, etc. The housing of Треве солопіев, евсь рачив ings of his people. control the sanitary surroundings of the dwellbelieves that he receives better results by own-ing everything, and by being able thereby to

three large rooms, drying-place, cellar and garden. There are fair tenements, in two or

vages at 75 cents per day pays \$37 per year for

a garden for \$45 per year. A workman with

rooms, a drying-place on the root, a cellar and

gunnaker, earning \$45 per month, receives four

ments and gardens at low rents. A foreman, a

trial establishments, including excellent tene-

advantage is with the operatives of Amer room and excellence of living are concerned, the house is concerned; but so iar as quantity of same olass in America. The great mass of the former are, generally speaking, quite as well housed as the latter, so far as the quality of the ropean factory operatives with those of the is quite impossible to compare the houses of Eu-3T

\$30 per year, and for three or four rooms from

very largely in flats; renta in Dandee and Dandees and Dandermaine Design to the first for two rental respectively. There are honges with flats in Belfast. In the west and east of Scotland the operatives live operatives. The houses are tidy, and rents are from 48 to 60 cents per week for four rooms. improving the dwellings of the linen factory they have changed their cramped city abodes for clean and light houses. Belfast, Ireland, is operatives have gone to the suburbs, where \$2 per week, according to number of rooms. In Glasgow no cellarages can now be found. The the influence of model works extends to the houses of the people employed, which are here very comfortable. Renks vary from 72 cents to ployes. The works of the Messrs. Clark and Messrs. Coates are model establishments, and faence which arises from proper interest in em Paisley are excellent evidences of the good inhave good houses. The houses at Salford and Manohester are not so good. The factories at Crowleys at Halifax employ 5000 people, who operatives are helped to acquire a treehold. The They rent three rooms for £10 per year, and the lage, in Halifax, built by James Akroyd & Sons. the best houses in England are at Copley vilper week for three rooms. Some of shillings per week full run, and the rents are

\$30 to \$50 per year.

At Saltaire, near Bradford, the homes of the от івстоту орегатічев.

tried. The boarding-house is not an institution model workingmen's houses" are being bemret si tadw erecept where what is termed as a rule, separate ones, the tenement-house be But the houses of the operatives are, This is generally true of all European factory The tenements of three rooms have much less space than tenements of three rooms here. nuch smaller than factory houses in America. stone, as a rule, present a cold and cheerless look. The dimensions of the British house are British factory houses being floored with D. Wright to this conclusion, he having written a special report on the "Factory System of the United States", for the Census Bareau.

factory towns, both in America and Europe, it is easy to find dwellings occupied by factory

is perfectly true that in every large factory

the word " home" a reality to the poorest. It

which are making the English significance of

great change, and are still undergoing changes,

the home proper by transferring work to the

the workshop home of the domestic system to

номея об Рассоту Орегасічев.

The institution of the factory system changed

under the factory system have undergone

As a result, the homes of the oper-

by groups of persons called families. town one can find loathsome dwellings occupied

Son have works, the weavers carn 15 to 18 The houses are neat, tidy and prettily fur-nished, At Queensbury, where John Foster & work-people are excellent; rents vary from \$30 to \$100 per year for three to five-room houses. lioured . TM shael seatives of factory of serioli se well housed in one country as another.

The percent of more than 1000 The percent of The terms of the term they are very comfortably housed, and about ers and the municipality. Yet, taking the operative population of such towns as a class,

times been talked of. But even here the wisetiff-necked and rebellions "Saints" has somenethod of procedure that in dealing with the nngry neighbors, it had better be Utah, a bersevel sti bas tuo bejiw seesory yrammus has asel sti gaoms tuoda betuditsib sredaem It any of our Territories are to be by such

will be heard of this project hereafter, unless the newspaper press shall relax its vigilance. not to be thought of; nor is it likely that much to transfer before it, the extinguishment and sai yatanoo ent to noisivia fishifical as a country is eimorq a doue bas aoiteluqoq gaiworg ylbiqer so much already created, with such a large and

With such wealth-producing capacities and

\*689°9776\$

Helena, as follows: Gold, \$2,417,429; silver, \$4,633,160; lead, \$2,195,000; total value,

the year ending September 30th were, according to the estimates of the U. S. Assay office at

sans or Colorado. The mineral products for per cent, being much less than in either Mon-

The less of stock during the past used ofT lad a bas owt beeded two patrix ereves

for the last year having been \$3,000,000. There are in the Territory 442,363 head of neat cattle, 132,922 horses, 302,248 sheep and 60,411 swine.

the value of the property as assessed amounts to over \$20,000,000, the increased valuation

Idaho contains non a population of 97,250;

to be let alone, preserving the integrity of their the desires of the people and opposed to the best interests of the Territory; that official go-ing to say the inhabitants of Idaho singly wish

local jealousies and political ambitions, the work of jobbers and tricksters, repugnant to

tary of the Interior, denounces this suggestion of disrupting the Territory as emanating from

that they have no confidence in the wisdom or that they have no confidence in the wisdom or practicability of the scheme, which cutside these countries appears to have been warmly opposed or ignored in a manner denoting the little importance generally attached to it. Edward A. Stevenson, Governor of Idaho, in Edward A. Stevenson, covernor of Idaho, in the step is the second of the second of

to say on the subject, for the reason probably its dismemberment. The papers of neither Washington Territory nor Nevada have much vocates in the countries that hope to profit by

efter the manner of the sacient kingdom of Po-land, seem to find more than a few hearty ad-

at least so far as we have been able to observe.

Nor does this plan for dividing up Idaho
and apportioning it out among its neighbore,

the approval of the entire press of that country,

to entitle her to admission into the Union as a State. The position so taken by us meets with

edt ni blnow eds, tadt toeqsorq vreve diw dynone noitalnqoq evad sraev wel a lo esinoo

to the maintenance of a Territorial Government,

of the great Northwest; having resources ample

enoitoes gnisimorg bas suoregeorg teomising

gress. In support of the views expressed in that article, it was stated that Idaho was one

This paper contained, a few weeks since, some editorial remarks intended to show why the proposed obliteration of Liano Territory should not be favorably entertained by Conservation of the contained by Conservation of the contained

The Proposed Obliteration of Idaho.

his annual report, just forwarded to the Sec

According to Governor Stevenson's report, Territory till such time, not far distant, shall move to be admitted to Statebood.

ly now to meet with happy solution without re-course to such radical and questionable measure. dom of adopting such policy is open to doubt, as the much-vexed Mormon problem seems like-

### Chlorination of Gold-Bearing Sal-

puides.

The following paper was recently read before

The following paper was recently read before the American Institute of Mining Engineers by Gybon Spilsbury of New York City;

In a paper read at the last meeting of the Institute on Scribton, Pa., I referred to the proposed introduction at the Haife gold mine, proposed introduction at the Haife gold mine, sont I have since them feet experimenting from I have since them feet experimentally from I have since them feet experimentally with this method and operating it on a regular scale, and I think it may be of interest to scale, and I think in a scale, and I think it will be seen experimentally and the content of the content of the feet experimentally have in the search of perfection by our fellow-member, Mr. Adolph process, as is well known, consists in particulars, the charge of ore to be chlorinerated by the ordinary metallurgically, is very objectionable in some particulars, especially the diffinculars, especially the consists in the stuffing-boxes and the consent escape of chlorine, while fairly of keeping tight joints in the stuffing-boxes and the consecuted and requires now adopted is extramely estable and requires now adopted is extramely estable.

The cost of repairs has also proved excessive, simple and requires now adopted is extramely estable.

The system is a sufficient on the stufficient of the consecuted in the requires of a plain from the stuffice of the st

simple and requires no tight dishes the blacked.

The Chlorhestor.

The Chlorhestor.

Consists of a plain iron barrel lined with lead, and provided with a manhole on one side for party give ore. The ore is and provided with a manhole on one side for charging and disobarging the ore. The ore is partially filled with water; then a sufficient of partially dilled with water; then a sufficient of partially dilled with water; then a sufficient of the ore is poured the region is charged. On authority of chloride of lime is dropped in, on the partial search is extrement to recover is put in place and thoroughly secured, and the barrel is etarted and chloride of lime from coming in contract is to prevent the sulphuric acid the contract is to prevent the sulphuric acid which the other charge is completed the closed. When the charge is completed the contract is the prevent as been devised which there is the contract of the contract is contract of the cont

When this operation is completed, enough water is introduced to nearly fill the barrel, which is again revolved, so as to thoronghly wash the ore and

Dissolve the Ohloride of Gold.

The barrel is then opened and the liquor is decaded off upon large shallow filter-beds. Another water is then put into the barrel, other water is then put into the barrel, which is again revolved for a few minutes and then decanted upon the filter. Ultimately the way, and a final wash-water is given on the filter. The results so far obtained have been fitter. The results so far obtained have been result of the last sight charges run. Each charge contained a little over one ton of ore of through a 100-mesh and 60 per cent through a formed a little over one ton of ore of shory in the seasy and a seasy and of the ore through a 100-mesh and 60 per cent through a 150-mesh and 60 per cent of it would go a little over one ton of ore of through a fore one showed 36.70 gold per ton. get a rush of people to the place, and it often cocurs that persons come in from the mines with a fabulous account of riob strikes and of the biggest thing on ice that they have struck, and all that is needed is a small capital which by the millions.

The sgricultural and timber lands must also be puffed away up above all comparison. While we are willing and anxious to boom anything and anxious to boom anything we are willing that has just merit, at the same that the strict of the truth, at least that we are on the side of the truth, at least that we are on the side of the truth, at least that we are on the side of the truth, at least that is the sim of the Recovd. It is a well-that we can be side of the truth, at least that is the sim of the Recovd. It is a well-that is the sim of the second. It is a well-that is the sim of the second. It is a well-that is the sim of the second. We have also many good-paying gold mines and there is a large part of the scounty that has note of them are built in this section, it will sail before seeing the part of the county that has not for the seen prospected at all, and still many places we are told by impayen not been prospected at all, and still many other localities where gold has been found that have not been prospected at all, and still many places we are told by impayer not been prospected at all, and still and that the receiper this is the fact of the constitutions. In many places we are told by impayen and the sections this is the fact of the constitution of the recover are told by impayer in the section which will such be to the record which will such be seen of a some of our mines that be washing. One sengers long truther all many making an examinar. One some of our mines that have already been opened.

Our sgricultural lands are of the very beet, but the tract of country, in this vicinity suite. One of the track of country is the second of t

brida "

brida "

dario "

dar Assay of tailings from first charge gave \$1.56 per tor

In order to further test the advantages of this system, of the considerably one obarge considerably this system, I tried one obarge considerably in the test of the considerable way. While I used to this charge nearly double the amount of washwaren; and while the time occupied in filtering was much more than the other obarges required, the califing resulting contained \$5.68 per ton.

There seems to be no difficulty in filtering through a bed of ore from 3 to 43 inches thick, but when the thickness of the bed is greater, but when the thickness of the bed is greater, but when the filtering of and very the material become the filtering of such very the material becomes almost impossible; hence the advantage of accounting the consistency.

refine the intering of ence the advantage of decanting.

The precipitation is done in the usual manner
of decanting.

The precipitation is done in the usual manner
a considerable percentage of magnesia, which
a considerable percentage of magnesia, which
a finit, however, that the precipitation of lime
and magnesia may be entirely prevented if care
and magnesia may be entirely prevented if care
is taken to feep the tank-colution silcowed
to become neutral the negresia begins to show
to become neutral the magnesia begins to show
addition of a small proportion of free soid.

The cost of resating, labor, chemicals, and
power with is will never exceed \$4\$ per ton,
power with is will never exceed \$4\$ per ton,
power with is will never exceed \$4\$ per ton,
power with is will never exceed \$4\$ per ton,
power with is not stained that figure, some of
my work having been done as low as \$5.15 per
ton, the stained that figure, some of
the precipin a few cents per ton of the full assesting that the cost use of the full assesting that the cost is the full assesting the cost of the cost of the full assesting the cost of the cost of the full assesting the cost of the cost of the full assesting the cost of the cost of the cost of the full assesting the cost of the cost of the cost of the cost of the full assesting the cost of the cost of the full assesting the cost of the

THE excellent tools of modern times make the

In any of one won cheats these remarks bringed and the county, they are mistaken. We have the county, they are mistaken. We have in receipt of so many letters inquiring about prince county, that we take this method of giving our views in as straightforward a manner as we are able to do, without any exaggeration whatever.—Det Nove Record.

If any one who reads there remarks thinks a moment that we are trying to ", boom"

SHAKESPEARE, near Lordsburg, New Mexico, promises to be an active camp soon, as there is to be a 20-stamp mill erected immediately or the Atwood mine. Grading has about been completed, boring of tunnels a less arduous matter than auch work a much work a lew years ago, Last month, in the Cascade tunnel, in Washington Territory. This is the greatest distance ever accomplished in a single month in the tunnelly.

tainly not essily obtained at any of our great mining centers, and it may be that there is some little (sakousy shown toward those persons who desire to raise themselves by seeking for tions of trust, but who have not been subjected tions of trust, but who have not been subjected tions of trust, but who have not been subjected tions of trust, but who have not been subjected to some subjected the subjected marks to the young miners to educate themselves ments to the young miners to educate themselves to the young miners to educate themselves for the highest position statished in the work. In the owners and subjected to the highest position statished to the top of the young mines to the young miners to subject the subject of the highest places in the work they show a desire to obtain knowledge calcultions among the slow at the highest places in metallated to fit them for the highest places in metallated to the young persons seeking for interest and capitalists. The lessees of the young persons seeking for interest in the world be most beneficial toward to the highest places in metallated to the first served in the young persons seeking for interest and capitalists. The lessees of the young persons seeking for interest and capitalists. The lessees of the young persons seeking for interest and capitalists. The lessees of the young have made to the young persons seeking for interest and capitalists. The lessees of the young high world to the promoting the world to the young the your orath, as well as to their interest, have done more to their in the young persons and seeking for interest and seeking for interest and seeking for interest and seeking for interest and seeking to the interest and seeking to the interest and seeking seeking of or the young and seeking world and seeking was sound and seeking seeking to the search of the seeking to the seeking the seeking to the seeking to the seeking the seeking to the seeking the se

occurs that persons come in from the mines We have often been asked why the Record did not boom up Del Morte county and thereby get a rush of people to the place, and it often

Del Norte Connty.

so strong that one of my friends was able to indicate my passage, the dog followed my trail careful, It should be added, however, that when she was quit upon my tracks she did not spring forward immediately, but before taking ber course she carefully examined several impressions. Is, I also made some experiments with the idea of sacertaining

Male Power Which that Dog Possessed Dody. I made a great number of siggage in a field of potatoes in which there were a mine of bedy. I made a great number of siggage in a field of potatoes in which there were a number of laborers, and then placed myself behind a yards from the potato-field. The wind was you'll make a first the potato-field, The wind was being immediately put upon my tracks, I be dog the protato-field, but when she found then into the potato-field, but when she found then into the potato-field, but when she found the mit the the potato-field, but when she found hereif to the leeward of the place where I was, hereif to the leeward of the place where I was, hereif head, and came directly to the wall where I head, with the wall; she must then the sit odor from the stone odd. The shehough she was surrounded by door from the stone was calin. I lay down in a ditch with the too pof my head the shough where I had came in a stright line to the place, where I had came in a stright line to the place, where I had came in a stright line to the place, where I had came of the absence of the wind, the odor from my head as a diffused in all directions—nough, my head was diffused in all directions—nough, at least, to enable a dog to detect my presence at 1000 yards.

It was the property of the wind, the odor from at least, to enable a dog to detect my presence at 2000 yards. The Power Which that Dog Possessed

Trom These Investigations and the following conclusions may be drawn: The following conclusions may be drawn: The followed my trail, guided by the particuted by the particutary boots (1-6) and not by the particutary of my boots (1-6) and not by the parameded that the odor recognized by the einimal sommunations of the odor recognized by the sentimal communations of the property of

#### University instruction for Miners,

ing advanced by the engine and the engine and the engine of the engine o tion of some of our mines that have shready been opened.

Our exicultural lands are of the very beet, out the tract of country in this vicinity suitable but the tract of country in this vicinity suitable be for farming purposes is not as extensive are would wish, but much land has been cultirated, is gradually becoming settled upon, and will in time be made to yield an upon, and will in time be made to yield an men do not now, as was the ease in carly times, and men do not now, as was the ease in carly times, and on not now, as was the ease in carly times, but do not now, as was the ease in carly times, but do not now, as was the ease in carly times, are to other in this section betweet the other parties at the market. There are obter uniners is in this section betwich and the products find their way to an appreciative market. The bear found in large quantities, and the products find their way to an appreciant the products find their way to an appreciant on one of the best in the State, and that county, one of the best in the State, and that of not, wish to "distant when these of our chits in the cashing and waiting for 30 or 40 years for better times will live to the sections.

It any one who reads their most sanguing expections. agyanced pupils to the University. Four -bnes to sretnes gairutastanam bas gainim ruo to teom ai susse wel take four during the or by the University extension system successfully to bled stanemended the inducements held out It appears that in the north of England, ad-

The Scenting Faculty of Dogs.

terrier, which show better than all that I have read the almost emperatural faculty of the sense of smell of dogs. On a holiday when Broad-Walk in Regent's Park was incumbered with padactairs of scientistics in disasting says: I have made some experiments with a Concerning this power of the dog, the writer to a recent article in the Revue Scientifique [Translated for the Passs from the French by M. M.]

with pedestrians circulating in all directions,

in the First Experiment with pedestrians circulating in all directions, with pedestrians circulating in all directions, took when his attentiated by a strange dog I moved saway in a sigezag manner; then, mounting upon a set servinge, I watched his movements. Perceiving that I had not taken the direction in which I had where he had last seen me, and, getting my odor, traced me through all the sigrage that I had met and in the circum a hundred others, all fresh, and from several thousand that were older. I then undertook a hundred others, all fresh, and from several thousand that were older. I the a nedsther it series of experiments to determine whether it was the odor attached to the foot-wear or that one and the tracks of his master. I had a chieven of here of experiments of the foot-wear or that open the tracks of his master. I had a chieve had not attached for the foot which with which I had burdted for the decrease. Here does not seen a mant to make the tracks of the seent as excellent subject for mant to me made her an excellent subject for mant to me made her an excellent subject for mant to me made her an excellent subject for mant to me made her an excellent subject for mant to me made her an excellent subject for mant to me made her an excellent subject for ment of the seent and such a seen and such a such

In the First Experiments,
In the dogs sheen from the kennel by a stranger and brought to a place where the secent was to be taken. This point was always obosen where he was to be taken. This point was always obosen whom the animal was seeking, kept also to the word of the kennel was seeking, kept also to the tends of the tends o Having Made a Number

Of whether and the peak of Mumber for the for the for and the formous of whither and the forest of t At Fifty Yards I Removed Them,

He fifty Yarde I Removed Them, while Ent kept them with me and construed walking in my stockings for about 300 yards. Then the same distance. The animal estated upon the same distance. The animal estated upon my tracks and followed them 650 yards with heed so gentleman whom he eitstich. Is. I invited a gentleman whom he drede not yards from the house, I slighted, and drede of yards from the house, I slighted, and the vehicle; then I remounted, my friend in turn got down and walked behind the carriege for 200 yards. The dog went over the 200 yards at seingle stretch, and without had taken my place. This experiment, repeated sate why place. This experiment, repeated sate why the my place where my friend sate steems, as a single stretch, and without had taken my place. This experiment, repeated sates the same results. It, I put as always such as a single stream, as a coaking of given the same results. It. I put as a sange were the same results. It. I put as a coaking of given the same results. It. I but as a coaking of sains oil on my boots.

Adulteration of Foods and Medicines.

ing frauds of this kind, and where there is one made in this country in detecting and prevent oine, which is a matter of the greatest impor-tance the world over. Great progress is being enes est of noincests ewerd binetrow of relation for the median base bool to noiterestinks to toeidus lare The issue pressed upon our notice by the false and ainvolife Jeniaga ebam noticetallus of adulteration made expanses of adulteration of the contract of the co

tance the world over. Great progress is being made in this country in detecting and prevent ing the made soft this kind, and where there is one logical and the butter of this kind, and where there is one logical and the butter at the early the street and truck, as in the allowed by the State and truck, as in the allowed being exercised by the State and druck, as it is the street and entered as it is the street and truck, as it is the street and entered the street entered entered the street entered entered the street entered th

practice of physicians. It is stated that they were used as a remedy by the Indians. Fig. 1 and shower the flower.

Philipsbarg Mining News.

At the Pearl mine, which is loosted about is and a greater from Philipshurg, work is being replay and a greater from Philipshurg, work of are stired by paged of extracting ore, two care of which are shipped to Omaha every week for rewindred in the property is being a great of the property is now of a fritting and stoping. The ore is of wory week to a constracted by meaning the ore of the per cent. The state is of the per cent of the per cent. The constraint of the per cent.

youthful rembites to the neighborhood of the jear is the plant is old home sear of the Mississippl. The plant is the witch from the earliest stumes here earliest supported as a curstive agent, and solution which, from its peouliar appearance and actum wood-reaming buildren. It is as small tree, 15 to 25 feet high ground it as a trackly commences, but more commonly a straggling bush, 10 to 15 to 15 to 16 t to seinment steaders memorial solutions and the solution of th We reproduce from Dr. Vasey's sketches of

JezsH doliW edT



THE WITCH HAZEL-Hamamells Virginica

United States by one species, Hamamelis viv.

Jean, The leaves are short-stalked, three to the the tone process and the sides margine way to the set state of the sides margine way to the state of the sides margine way to the state of the sides margine way to the sides margine way to the sides margine way to the state of the sides margine way to markine state obtuse teeth, and somewhat straight conspicuous veins, the margine way to way the sides margine way to water the constraints and obtober, while the leaves the sides margine way to water state of the stree or shrub is and continuing on until winter. The state of the state

esy to have remained in the tailings. While the gold obtained in our stemp-mill and amalgamating works is seldom purer than 897 fine, the gold obtained by this process is generally over 878 fine.

Indians' Rights and Settlers' Wrongs.

wit: the ejection of settlers from what are claimed to be Indian reservations at Round Valley, Mendocino county, and Banning, San An exceedingly sorry piece of business is be-ing consummated at two points in this State, to

from sites where they have for years been laboring and have made comfortable homes, exporting and have made comfortable homes, exporting and have made comfortable homes, expected contrain most indignation in the case, and the local papers in the two contries at feeded contrain most indignant profests against feeded contrain most indignant profests against far as we can judge, the Government is doing a far as we can judge, the Government is doing a far as we can judge, the Government is doing a most serious injustice to some of our people. The case as made out by the settlers who have before the disposess the settlers who have a far to disposesses the settlers who find have been consupy all unoccanons. This, we are not trespassers on the lands and improve them, and by doing so the far and improve them, and by doing so the far and improve them, and by doing so the far and improve them, and by doing so the far and improve them, and by doing so the far and improve them, and by doing the far and an hear begind to the Southern Paoit. Second, on hearing that we were on railroad on which we have done. Our settlement Beoome and improve them, and by doing so that mouths before the land was reserved the land was restricted on which we had a valuable right. Which we had a valuable right. Which we have reserved for personal use. It has a base acquired a valuable water right, which we have reserved for personal use. It has a value of \$10,000.

Forth, on these lands we have mineral time.

Fifth, we have lived over ten years on these time. from sites where they have for years been la Bernardino connty. Maturally, driving settlors

the control of these lands we have mineral daims on which, on these lands we have another and daims on which we have layer spent to make the control of which we have lived over ten years on these lands and have made improvements of value to be the promyt of equity, these rights, thus proving, in a court of equity, these rights, thus and we are not showed the opportunity of elegible of the constitution and to be disposessed of property with the covernment and elegible which it is taking from American-born course of law.

Seventh, it is taking from American-born course of law.

Seventh, it is taking from American-born course of law.

Seventh, it is taking from American-born and—although they were clearly made citizens of the court of ecognized by the Government as and deserve the demonstration of all the deserve the demonstration of all citizens of the court of the constitution of the constitution of the court of the

PROSPECTIVE.—Much prospecting for quarks is being done in this neighborhood. In almost every direction prospectors can be found at work of rection prospectors can be found at work. They are all poor men, whose only work for a livelihood, in some cases they was they work for a livelihood, in some cases they was they work for their isobor; in the other cases they mange to their shory in the other cases they mange to make a consultant and the work to make nothing at all, even many instances they make nothing at all, even many instances they make nothing at all, even to make occupiling at all, even many instances they make nothing at all, even to get any body to furnish them with "grub to do any prospectors complain that they was and therefore often may it in Colorado it was for the moreyed men, storelegners and othere to for the in the discovered, the prospectors are to constom the interest of colorado of value is discovered, the prospectors are to colorado of value is discovered, the prospectors are to colorado of value is discovered, the prospectors are to colorado of value is discovered, the prospectors are to colorado of value is discovered, the prospectors are to colorado of value is discovered, the prospectors are to colorado of value is discovered, the prospectors are set of cut of the country there are to countraged more in this county there would be develop our mineral resources and be the means an increase of euch work, which would the develop our mineral resources and be the means of the country developed in the such that the country and the such work, which would the develop our mineral resources and be the means of the country and the means are the country and the such work. The country and the consider the country and the means are contracted the country and the such work and walushed means are in the country and the such work. The country and the country are deceased to the country and the country are deceased to the country and the country are deceased to the country and the country and the country

H. F. LANDON has been appointed Assistant Secretary of the San Francisco Board, vice Banaman removed.

QUARTA DISCOVERIES AT UNGA ISLAND,—Last spring a prominent firm of this city dispatched Acrobi Affactedhian, an experienced miner and discoverer of the famous Treadwall property, to prosecute a search for supposed locations north for Island. The firm has received advices that Molkethian has made some surprising discoveries of quartz leads which are setonishingly coveries of quartz leads which are setonishingly rich and unlimited in extent.

An IMFORTANT FIND.—Two skeletons dug up several months ago in a cave near the Orneau, in seletim the foliam, any distinct record exists. These prehistoric nidividuals were contemporary with the mamneth, and inhabited the country before the great toe ago. They were short and thick-set, with bread shoulders, supporting a long and with bread shoulders, supporting a long and manner of the country head.

FORESTRY REPORTS,—The State Board of Forestry has received from the State Doporter meant at Washington a most valuable book on forestry in Europe. It is made up of the representation to the forestry of the nations to which they are accretized. These reports were ordered by the accretized, thou State Brate had of Forestry of State Brate ordered by the Chistiman of the State Brate ordered by the terested in forestry can obtain this book by applying to the secretary, Mr. Sands W. Forenam and the secretary, Mr. Sands W. Forenam and the secretary of the secretary of the secretary of the secretary of the secretary. Mr. Sands W. Forenam and the secretary sand of the secretary of the secretary.

THE History of Nordon News is any regularin the same form and manner as the
tion, in the same form and manner as the
original London edition—both editions issued
simultaneously. The enterprise of the publishers in presenting this reprint for its American
casters, at the low and popular price of 10
contrs, will certainly interest a large number of
our readers. We have several numbers before
our readers. We have several numbers before
our readers. We have several numbers before
us. The edition for Angust 27th contains 18
illustrated pages—making in all a 32-page
journal, elegantly printed upon very superior
paper. It may be had of news agents general.

Jy, New York office in Potter building.

A NEVADA MINE SOLD.—D. H. Jackson has sold four-rights of the Bunker Hill gold mine. Battle Mountain district, to a Chicago and Denver syndicate, of a Chicago and manager, for \$75,000.

#### The Alien Land Law.

tal in developing our mineral resources on a large scale in the Territories. It may be un-fortunate that this is so, but it is none the less that we are largely dependent on foreign capipractically withdrawn from the mining field. In previous articles in the Press we have shown while the Act stands as it does now. They have hand, Attorney-General Garland has given an opinion that it does not. Still aliens will not now buy mining property in the Territories that it does apply to mines. On the other knowledges that he knew nothing of mines and had no intention of including them. But Senators Stewart and Jones and others all agree noticed. The member who drew the bill acas well as agricultural and grazing land. It went through Congress without the point being senim of beilggs take the Act among noos saw il large amounts of real property in the Territory. ests of the Territories. It will be remembered that it does not affect the States in any way, but is intended to prevent sliens obtaining have been very detrimental to the mining inter-Alien land law in March of this year, its effects As was predicted just after the passage of the

the development of our mining is a great weight mort bas tramssvai mort betididorq si tsilst but the provision under which the foreign capialiens from grasping or holding great and ex-tensive areas of land, may be unobjectionable, law," it says, " so far as it has or will prevent tana says: "Montana's interests have been greatly cramped and her progress much retard-ed on account of the alien land law. That concluding his report, Governor Leslie of Montheir respective annual reports, just printed, call attention to the ill effects of this law. In s fact. The Governors of Idaho and Montans, The Governors of Idaho print

among us and help all connected with the minthat would be idle. They spend large amounts to, cannot, because of this law. Many in-stances could be cited to show that foreign cor-porations have invested millions in properties mew odw nembiligaH bas, and tasvai ton lliw best for their interests, and their experience should outweigh all theories. They find the law burdensome. They have property Americans papers that the law is just and should apply to mines as well as lands, it seems that the people in the Territories ought to know which is mand bindrance to our people."

While it is argued by some people and news-

ot as oa betnems ed wal ent tant guizes bengia bna betelurio gaied ei noititeq a odabl al ing industry. American capitalists, as a class, do not invest in mines, while English capital-

Doubtless, similar petitions will be forwarded exclude mining property from its operation.

from other Territories. The Idaho petition is

trom other Territories. The Idaho petition is a follows:

To His Excellency the President, and to the Congress of the United States.

We, the undersigned, citizens of Altures county, Idaho Territory, respectfully represent that the mining interests of our Territory are colled anywhere. For their development, and colled anywhere. For their development, and the capital that can be induced is needed; all the capital that can be induced is needed; but in our country the arounds of remunerative in the capital that can be induced is needed; but in our country the arounds of remunerative in the capital that we must resort to fortune interest are so high that we must resort to fortune eign money centers to the requisite mean.

Issay, and commonly known as the 'Alien mines by aliens, has already resulted in the expital, and commonly known as the 'Alien clusion of a large amount of foreign aspital, and commonly though the purchase of our mines by aliens, has already resulted in the expital, and commonly the or foreign capital, and commonly the large among the structule of the common of the common of the common of the constitution of a large amount of foreign capital, and common of a large amount of toreign as the 'Alien Considering the email to result the trans of money invested with us for their purchase and subseversed with us for their purchase and subseversed with us for their mining intense he are an or morey intense their profitable of the resulting benefit to as from their capital interesting benefit to as from their capital investment.

Vestment in holding such property is nearly expensed to the resulting benefit to as from their capital investment.

Vestment.

We therefore respectfully pray that said Aot
We therefore as a meanded as to exclude from
its operation all mining property, including
water rights, mill sites, and all other mining appurtenances used for the working of mines and
the reduction of their ores, and thus open to
us, for the better of our mining interests, all
the markets of the world.
And we, your petitioners, will ever pray.

DISCOVERIES of gold and coal are announced in San Luis Obispo county. In one place it is grated there are evidences of work having been

the Mexicans at one time worked the mine.

done in remote times, and it is suppos

mill " near the river, but the old Hitchcock mill. Buttes mine was not the fine 60-stamp "Yaha THE mill which bearned recently at the Sierra

tinued returns, even though they be of moderfactory results when prosecuted with a patient economy and with less regard to large and transient than to certain, steady and long-contransient than to certain,

A Paying Mine. ate proportiona

\$3,523,930, which shows an average yield of \$27.99 to the ton. This bullion carried \$1,458,has yielded bullion of a total assay value of ed from the various levels of the mine 125,876 tone of ore, all of which have been milled by the Company, and ending on the 30th ult., there has been extractbonsars days, and because it is an old "camp," very little is said of it. Yet during the year ni nedt nosiraqmoo vd asel si bleiv edt esu The Consolidated California and Virginia mine alone, if located elsewhere than on the Constook, would advertise the camp so as to attract attention to neighboring mines. But because the vield is less the capacity mines.

o stoogeora nitiw , tuo beneqo ed won nas enim sight, taken in connection with the fact that by the extinguishment of the fire the whole large quantities of ore which are in save put the mine on a dividend-paying basis. tities of paying ore, which, with the ore de-velopments made in the other parts of the mine, since grown into a development of large quanannual report that there were indications of improvement in the north drift which was being run on the 1400-foot level. Those indications then described have led the way and have Superintendent W. H. Patton stated in his last The past year has been an eventful one for the Consolidated California and Virginia mine. .19vlis ni 80.426,350,924.06 in silver.

velopment varies from 5 to 50 feet in width, and lies east and independent of the old stopes onutes of richer ore at intervals. This ore dealmost continuous ore, which will average by assay \$25 per ton. To this may be added foot level, as far as has been developed, shows the 1300-foot level down to at least the 1500. to length in ground of 400 feet, the mine from point 200 feet south from that connection, a toand south drifts on the 1400 level, from a point 200 feet north from the C. & C. connection to a prosperity.

In the direction of the main line of the north inther developments, give good reason to this company to feel assured of a long continued

eoslig ai saismer llite viitasup bed has furnished a portion of the ore extracted

s at \$1,080,000 in dividends, which is a The mine has paid during the past year the from the mine during the past year, and a large

Havens for the fiscal year ending Oct. 8th: pretty good showing for one which by so many has been considered a played-out mine, The following is the report of Secretary A. W.

Bullion samples. \$680 67 mine for fiscal year. 3,526,148 52

Legal expenses.

Jaleries and weges.

Inferest and exchange.

Supplies.

Assay office.

Assay office.

Trignis office expenses. W. H. Patton, Superintendent, balance cash in Virginia.

Nevada Bank, belance cash on hand.

Balances outstanding last annual meeting since settleding last annual meeting.

Advertising

00 002\*1 00 000\*680\* 96 888\*1 88 087 17 74.8\* 799 97 968\*71 00 328\*188 00 94\*937 00 004\*9 96 047\*9 96 047\*9 97 106\*9 98 9848 16 942\*7 Surveying. Pingarana Pividends, Mos. 2 to 11 inclusive feal setate

was appointed president for the ensuing year, A. W. Havens, secretary, and D. B. Lyman, superintendent, W. H. Patton having resigned 

Jennus 7 .oM ta old and about worn out. It was up on the hill It had 50 stamps, but only 20 were in use. The mill itself amounted to little, being very

### The Best in the Long Run.

past been undergoing a change, California hav-ing taken the lead in this new departure. to market their shares at a good price. Gradu-ally this condition of things has for some years how wastefully were the ores worked, so such immediate and large returns were had as would bring enrichment to the owners or enable them how rapidly were the ore deposits exhausted or rather than moderate and lasting profits. Lit-tle did it concern the majority of our miners been more anxious to realize large and speedy blose engaged in the business having, as a rule this coast has until quite recently been conducted too much on the high-pressure principle, It is undoubtedly the case that mining on

fits it has conferred on the general public. The this, taken as a whole, has been the era of its best results, whether regard be had to the re-wards it has brought to the miner or the banemetals has been with us a staid, steady-going, fairly profitable business, fully as much as as any of our other leading industries. And For a decade or more mining for the precious lode. As a consequence, our mines have been comparatively long-lived, nor have we more than a few utterly dead properties in the State. time characterized operations on the Comstock such shamefully wasteful manner as for a long and greed, not often have the ore bodies here been worked out with such reckless haste or in of the country. With all our had management ples of the business as in some other sections Never in this State has mining been carried or it and princi-

when it was two or three times as large. years worked more good than was accomplished product of our goldfields, widely distributed and carefully expended, has during these 10

was rich one week and bankrupt the next. The Dabbling in stocks, half the community commotion. Fluctuation was the order of the nanza, and then in borrasca, whereby every-thing was kept in a state of uncertainty and product of the mines was uneven, the leading companies on the Comstock being now in bo-Looking to our neighbor on the east, we find that an experience not unlike ours has been had there also. At first, all was excitement, ex-

of being divided up among many holders, bastani wel sait to the benefit of the fer instead aggregate output of the mines was enormous, millions applied to little or no purpose. The of dollars were wholly misapplied, and other travagance, speculation and waste. Millions

is in every respect a more legitimate business now than it ever was before; and it requires only a strict adherence to the policy now being to maintain also a good degree of vitality in all Western Meveda. The truth is, more system and Comstock is being done with more system and immediately dependent upon them, but served men and buy nearly as many supplies as ever, the mines having not only kept up the towns larger. The companies employ nearly as many ly took place; and, although the product of the Cometock lode is not a quarter of what it once was, the present yield is accomplishing almost as much good as it did when it was so much leaves. And so matters in the Washoe country continued for a good many years, when there, as here, a change for the better gradual.

.ered enob gai ville now than in the flush times, and, consebeing employed in the mines about Lead there, is greater at present than then, though its value is less. This implies that more men metals, gold, silver and lead produced Leadville, Colorado, is not at present the overcrowded, rapidly-growing from it was six or eight years ago. Still, the tonnage of the and fairly prosperous career, gaol a senim esett tor strani ot eredt beneruq

There are in other sections of the country the bullion product was of greater value. the country quite as prosperous now as when who, remaining, would have been only a drawback to the place. Here, again, mining is in a more healthy condition and the business of simply because the place has got rid of its idle and superfluous population. It is the drones and non-producers who have left, and with less crowding and bustle in the town, it is If there is seemingly less life, quently, that more business of every kind is be-

force; the lesson to be learned from all which is, that'the business of mining for gold and sil-ver is attended always with the most satis. going remarks will apply with more or les mining camps and districts to which the fore-

> CIENTIFIC D RESS MINING

пемех & со., Рабізавета.

OHoe, 220 Market St., N. E. cor. Front St., S. F.

OHoe, 220 Market St., N. E. cor. Front St., S. F.

Torms of Subscription.
Annual Subscriptions 48, Year embed without cash in advance. All arrearges must be paid for at the rate of \$3.50 per sanum.

Por Line (agate).

1 week, I month, 8 mos, 12 Advertising Rates.

Гоирои Асеит—Агрер E. Ann, 63 and 64 Mew Br

Our latest forms go to press on Thursday evening. Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Entered at S. F. Post Office as second-class mail matter

SCIENTIFIC PRESS PATENT AGENCY

DEWEY & CO., Patent Solicitors.

Saturday Morning, Oct. 15, 1887. SAN FRANCISCO:

#### TABLE OF CONTENTS,

ILLUSTRATIONS.—Operative's House at Willi-mantic Factorice, S41. The Witch Hazel, S48. Apparatus for Volumetric Deferminations, S45. BINTORIALS.—Operatives' Houses at Factorice; The Galifernic of it along K41. Facing Forest; The Beat on the Lowg Kaur, A Paying Mine; Forest Law, S44. Apparatus for Volumetric Deferminations; Inw., S44. Apparatus for Volumetric Deferminations; Mineg Eiver Beats with Dredgers; Foundty Notes, S45.

Minink Hiver Beds with Dredgers; Foundry Judices (245)

MISCELLANEOUS.—The Scenting Beaulty of Dogs, University Instruction for Miners; Del Yorke Country; Obloination of Gold-Bearing Sulphides, 248.

Hears!, Shights and Settlere Wronge; The Witchention of Gold-Bearing Sulphides, 245.

SOIENTIFIC PROCRESS.—The Three Forces—Thysics, Witches Forces—Thysics, Witches And Medicines, 246.

SOIENTIFIC PROCRESS.—The Three Forces—Thysics, Witches And Medicines, 346.

Insignificance; Some Alleged Mow Elements, 246.

Insignificance; Some Alleged Mow Elements, 246.

Invention in Hoo and York Proclees—And Contraction of Water Pleas, Gas and Water Pleas, 248.

Invention in Hoo and Sorew, Water Pleas, An Impersion of the Pastic State Mower Steam Power for Selective Andreast Monday Contraction of Management of Managemen

"Solur Brilling; Steel Constitution of Constitutions and Constitutions of Constitutions of Constitutions and Constitutions of California o

## Passing Events.

The heated term which we have just passed through lasted longer on the California coast than any experienced for years, and it is somewhich ever occurred in these localities before, extinguished, but not without doing consider-sole damage. They were wider spread than any meds counties during the past week have be much damage in Sonoma, Santa Oruz and Ala-The field and forest fires which have done so

at San Francisco than elsewhere. what strange that it was felt with more severity

In the more mountainous regions of all and the the same same are designed to the prospectors are designed to the following to the same prospectors.

tollow. The whole thing will doubtless lead to a purification in several departments. just now is the subject of the prosecution of jury-bribers. The Grand Jury has taken hold of the matter with vigor, and already one of these men has plead guilty; other trials are to follow. The world the project of the contract of the co The principal topic of interest in the city

the Anti-Debris Association seems to be re-newing its fight against the luckless hydraulic As will be seen from paragraphs elsewhere,

Ush, resulted in the choice of a compromise ticket, the Mew York "outs" securing three of the directorate, the Francklyn-Brown people three, and a seventh, man supposed to be THE annual election of the Horn Silver mine,

Mining River-Beds with Dredges.

ery, which have been remedied elsewhere. have been in other countries. Possibly our failures have been due to defects in the machin-Several articles have expeared in the Prazes of late giving the result of river-bed mining by means of dredges. In California the method has not been snocessful, though it appears to have been in other countries. Possibly our had a superior of the second of the second

On the Carson river, Nevada, the Ras dredge, described not long since in the Persa, is to be tried. The plan was laid out some time since, all events, as recently stated, a dredge is soon to be tried on the Feather river, on an im-

The Lyon County Times has this to any

into the river in large quantities and for a period of many years, and it is this which Dr. Rae (for the Carson Dredging Co.) hopes to re-

gem and quickeilver from the mills have passed

but at last instructions have been received to

the project:

ere in first admitting the permanganate obvi-

permanganate, and the urgency of technical retroduction of new methods dependent on the tie of the standardized solution. But the inpermanganate seems to have been consigned to employed for various other reagents, while th appointed laboratory. Expedients to economize time and insure accuracy are generously manganate is a very desirable fixture in a wellquisite for the constant use of potassium per-

Engineers, is so simply contrived and works with such entire satisfaction that a description gainiff. to stutitenI assiremA edt evoled reqeq The apparatus designed by Clemens Jones for the laboratory of the Thomas Iron Company at Hokendanqua, Pa., and described by him in a tanianvaco bas oditanios

of it may be of use. It may be prefaced that the obstactoristics of a suitable device offer some mechanical difficulties when combined in

the reservoir E. The burette is clamped sethe blast sapirator, shown in out (Fig. 2) of the front view. By means of an extra stop-cock, Fig. 1, consists of the graduated tube proper and an arm E fused to it below the 50 o.c. a continuous appliance.
The burette B (50 c.c. to 1-10 c.c.), shown in

admit the prong of the tube E. with it, and secured to the slide, in front of which the burette is adjusted. The reservoir F is suspended in a notobed shelf within the moves freely on guides between two parailel sides L, suffeally mounted in a frame, and through their whole length. Back of the burette

the inlet-prong through a hole in the center. ground to fit the top of the reservoir, receives lowest point, the inlet-prong has a safe margin, d, the bottom. A round glass plate, d, It is so placed that when the slide is at the

ing. The writer gives preference to an Erd-mann float, having two stripes of white paper pasted inside, equidistant from the etched line

manently and is caught on a ctage of fine plati-num wire supported by a spiral, when it de-scends within half an inch of the inlet tube. The float remains on the burette per--xo ai viluomib oli "trage doni na iled bus nove ro .o.o 30. ot sidt gnibsor ni booneirog

The advantages of the apparatus have been

1. Great economy of time, enabling the oper-

2. Extreme accuracy. Standardizations can be readily verified to the sixth decimal place.

tion. But, as an extra precaution, both reser-

The solution in the reservoir, and filling the inlet tube, is protected from light from all points, and does not suffer unusual decomposit.

cated to the burette, the lower or outlet stop-cock H being closed. Stopcock D is then opened, and the burette is filled exactly to the zero

4. Simplicity and control of operation. The reservoir is filled and placed in position; the

out at the lower stopcock. This evaporates in a short time all moisture condensed on the

a gentle current of air through the burette and

versing the sapirator with a cap of rubber tub-ing over the central bulb outlet, and directing

cleansed after naing. It is then dried by r apparatus can be oleansed in a few moments without removal. The burette alone is always

solution are always in readiness, and the entire

3. Permanency and convenience: burette and

2, and the saction produced is communi 

ator to fill the burette, make any number of titrations, and obtain the readings without titrations. The burette can be filled instantly without aubmerging the float.

eq of puno

Either float or meniscus can be used in read-

K, shown open in Fig. 2, and is then incased in to a box which has an annular hole in the top to e, and is introduced through the side door

is a porcelain scale G, graduated to correspond curely to a slide C, which is counterpoised and D, connection through E is established with At its top are rabber connections with

quirements where it has long been indispens-able, must produce a revision of practice more

sod should a bas esternd vranibro as to esaces that trouble.

The Untargular shelves M serve the initial nine months of this year has been 817,453 fine purpose of giving rigidity to the sides, and the onnotes of silver; ore sales \$398,462. From this tions.

Comparating for Volumetric Deferming.

Lions, the solution is prepared times that the mentioned that the condition is prepared to the the transfer vessel, from which lie can be transfer vessel, from which lie can be transfer to the transfer to th

BURETTE AND RESERVOIR. OF CLAMP 11 1614

pipe will be landed on this side, at or near is conveyed over the marshes on treatlework. The Risdon Iron Works are at work on a Foundry Notes,

The submarine pipes, which are of wroughtiron, are 16 inches in diameter, and the lengths are connected by flexible lead joints. The distance from Dumbarton Point to this shore is 6300 leef, and the depth from 10 to 50 feet. The nine will be landed on this city of a manual panels in the control of the con large quantity of iron pipe which is to be used large quantity of iron pipe which in bringing water to San Francisco from Alameda and diene, and server as 36-inch appear, and apprent a server as server.

over, The Lyon County Yimes has this to eary of the project:

This dredging proposition differs from any out State. There are no long tamped in out State. There are no long tamped in differs to be sunk, requiring the out State. There are no long tampels to be out State. There are no long tampels out State. There are no long tampels out stream for the schore the company could out stream for the state been poured in a continuous seam into the story of the millions of treasure that the story of the millions out stream into the she of the Careon. It outly remained for an intelligent man to go slong that stream and by sampling the sands, satisfy the stream and by sampling the sands, satisfy being before any one here was aware of the fact, He before any one here was aware of the fact. He had sampled the river for a distance of 18 mained for him to perfect a plan for the reconvaries, and informed instead of rushing ery and expending much money untelline is as exertain, as it is in the province of ery and expending himself point by point match he is as estrain, as it is in the province of man to be, that when he shall now the boint of that when he shall now the sand no confinery will be suitable for the work and no confinery will be suitable for the work and no serious difficulty can be encounted in that the serious difficulty can be encounted in that

At the Union Iron Works there are now some Ravenswood, from which point it will be car-ried to meet the main from Crystal Springs.

equae emuses of guinning et a resinal to a consistent of The inside platings of the bottom end to a significant of the residual to the residual of the residua lind edT . videroval gaisergorg bas, notion11s The engines for the new ornisers are under con 1200 men engaged in the various departments.

der the same scaffolding the keel of a splendid new passenger steamer is being laid. The Puget Sound towboat Tyee lies slongside In the next berth to the war vessel and un-

The repairs on the steamer Umstills are sarly completed. Mew iron masts are being ner boiler. ne of the wharves, having new flues put in

atepped and all modern appliances put in.

THE LICK PHOTOGRAPHIC LENS, -The LICE

anises anellecose it the coops of berreleng the saint and reader retained to a sign and retained to the possibility of the poss as large as the object glass of the telescope, but perspire corrector." for the great telegoope.

The trustees weald have been glad to get a disc ing. The disc is 33 inches aperture, and is in the hands of the Clarks to be figured as the "phoeccived, and appears to be an excellent castedr vol-gaingergotodq ni ylevisuloxe besu ed meed sed-notlimeH tanoM ta eqceselet tserg to Sons of Massachusetts, stating that a disc to trastees have received a telegram from A. Clark

sourng ferideaty for all practical purpos still larger lens. The present disc, when fig-ned and finished, will doubtless prove highly

the water to the lake, fume at the mouth of their tunnel to conduct THE Sutro Tunnel Company have built a new

APPARATUS FOR VOLUMETRIO DETERMINATIONS.

voir and tube, except the immersed prong, may have and to be suitably painted. If desirable, all but a few matter of experience, the writer has repaired. The water-wheels are spinning.

As a matter of experience, the writer has read to 20 accurate and the stamps are dropping.

As a matter of experience, the writer has read and the stamps are dropping.

## MECHANIGAL PROGRESS.

The Basic Slag Invention in Iron and Steel Works Practice.

An IMMENSE ROAD ROLLER.—A 15-ton roadand is a part of the state of t and of a malleable glass, they would form a water-pipe to which there could searcely be an objection. Strong, tough, smooth and independent as the structible, and made of a material that it is not without the found almost everywhere, it is not without the found almost everywhere, it is not without the cange of probability, says a writter in the American Engle of probability, says a will be used in any one locality, a furname will be erected and the pipes made where have yellowed.

RAILEROAD AXLE-BOXES WITH PAPER BERRTWGS.—According to Industries of London, experiments are now being made on the Prussian
State railroads with a passenger car fitted with
Ulfer's axle-boxes, in which the brasses are
replaced by bearings made of segments or
replaced by bearings made of segments or
replaced by performent placed side by side and
strongly compressed. The friction takes place
strongly compressed. The friction takes place
dego of the parchment placed side by side and
abter the body of the journal and the thich
ing to the parchment segments, and, accordis harder and in a better condition than the
of any metal bearing. On the must be taken
of any metal bearing. On the outside of thee
prevent subsequent shrinkage, accompanied by
prevent subsequent shrinkage, accompanied by
prevent subsequents shrinkage, accompanied by
prevent subsequents shrinkage, accompanied by
prevent subsequents shrinkage, accompanied by
oil or with any of the such and any of the searings are
oilsr of the journal. These bearings may be
oil or with any of the usual mineral lubricating
oil or with any of the usual mineral lubricating
oil or with any of the usual mineral lubricating
of the fibrication. Some of these bearings nay
and have given perfect satisfaction,
also been fitted in a sawmill at Ucekermunde,
also been given perfect satisfaction.

IMMENSE STEAM-POWER FOR ELECTRIO LIGHT109.—Probably the largest contract ever made
for steam boilers for stationary purposes has
recombly been awarded by the Edison Electric
Illuminating Co. of New York to the Babcook
& Wilcox Co. for 8700 horse power of their
stationa now in process of erection in the oify
water-tube boilers, to supply three new central
stationa now in process of erection in the oify
of New York. It is expected that with ecoindicated horse-power of not less than 15,000,
which is greater than that of the most powerful steamship allost. This is the thirty-fifth
which is greater than that of the most powerorder received from the different Edison comorder received from the different Edison compant of the process of execution in the
pant of the content of the content pant of the pant of the content for other received from the different Edison com-

when the sods must be removed and dried. Its then ready for use sgain. Engines of this kind have been used in Europe, but these are the first in this country. \*\* SODA " EVGINE,—It is against the law for steeks in steeks engines to be run on the streets in Minnespolis. To do switching work there, two Minnespolis, To do switching manulachtering. The boiler will contain the tons gives an intense when dampened by steam, gives an intense when the sods must be removed and dried. It when the sods must be removed and dried. It

WROUGHT-IRON PIPES OF THE PAST.—A process for the manufacture of wrought-iron pipes was patented by Whitehouse in 1825, and pipes manufactured under this invention were gamies. Prior to this invention, for many years, old gun barrels were used for services, and when these became searce wronght-iron pipes were made by James.

A COMBINATION MAIL AND SCREW.—An East-ern inventor has devised a new sorew—half nail, half sorew—which is said to beat anything versart. Two blows of the hammer and two turns of the sorewdriver and it is in. Its hold-ing power in white pine is said to be 332 pounds against 298 pounds, the holding power of the present screw.

STEEL RAILS:—An interesting test of steel rails was made at the Troy Steel and Iron Comrails works, Troy, N. Y., on July 28th. A rail was struck free times in the center, which was unsupported, with a five-ton hammer, and could not be broken. FINE DEILLING.—Edward Peck of Woodstook, Ga., recently mended the winding that the of a watch by drilling a hole so small that the point of a needle served as a rivet. So small was the amount of point used that its absence could not be detected by one sewing with the needle afterward.

This late invention in iron and steel works practice promises to be of considerable service in processive and a steel works in preceding exconomy in the mills. It has been patented obeh at home and about a new furnaces in place of the mine or sand bottom invention consists in the substitution of a new basic slag bottom for mill and other repeating inpace of the mine or sand bottom nent advantages claimed for the invention are menerous and have been set forth as follows:

I. A decrease in furnace waste of \$2\$ per cent and content and revenient and reve forms an axellent fettling for the production of a menerous and have been set forth as follows:

I. A decrease in furnace waste of \$2\$ per cent face intent which is production of a face from the forms as axellent fettling for the puddling, in place of the ordinary flue cinter the puddling, in place of the ordinary flue cinter the puddling, in place of the ordinary flue cinter the puddling, in place of the ordinary flue cinter from the fortion.

A leaves of bars, plates, helets and other security or repairing and fettling the bottom, owing to the small amount of alag required.

The bottom is made as follows: The old sand mine bottom is cut out to a depth of the soul and mine bottom is cut out to a depth of about two inches is put in its place to a spread and mine bottom is cut out to a depth of a short two inches is put in its place, being the one fire an inches; and the basic slag in outes of about two inches is put in its place, the cinter of the surface, when the bottom is ready for charging. Thus made, the bottom is ready for charging. Thus made, woo out, to three owt, of slag per week is quite two owt, to three owt, of slag per week is quite woo out, beep it in axellant to continue the continue of the interesting. From and the continue of the interesting of the surface is quite to the own of the continue of the continu

A Saving of M Per Cent

A Saving of M per Cent

Is claimed for the invention—equal to \$35 to \$50, according to its quality, upon every 100 tons of iron melted.

This saving, according to the English correspondence of the American Manujuckurer, is due to the inet nature of the sale one formed really precedence, so that the scale from the bottoms of piles, tests the iron or steel from turbher waste. The bottom being quite free from silics, the cinder tormed consists of unalted seally which is an except the iron or steel from turbher waste. The bottom being quite free from silics, the cinder come consists of unalted seals, which is an exception to the tests of the saving is compared only many consistence of the saving is a seal of the consistence of the saving is compared to the saving in the saving is seal of the saving in the saving is sear and the saving is the saving in the saving in the saving is the saving of the patentian who have carefully compared the new basic bottom with the sand bottom.

The Actual Working of the Mey Invention.

The Actual Working of the New Invention.

The Actual Working of the Mew Invention. In the case of steel works which possess no puddling furnaces, the cinder produced from the mew bottom can be readily sold at \$5.75 per ton instead of \$1.37\$, which is the amount obtained for the ordinary fix from sand bottoms. At first the patentees had a little difficulty with sheet furnaces, as, owing to the large amount of damping down, the cinder would not run of damping down, the cinder would not run of damping. But he patent is working most successfully at Mesers. Brooks, Smethwick, and Mesers. Philip Fancett & Co., near Birming. Darn, both of which firms make a specialty of sheets. These bottoms have also been recently put in by several other firms and are fast coming in the patent of the patent and are fast compared to the patent of the patent in the patent of the pat

#### American Steam Engines.

American Steam Engines,

york done by prominent American steam engineed that the force by prominent American steam engine and locomotive builders is thoroughly work done by prominent American steam en documed by any other state and locomotive builders is thoroughly with the same kind of work performed by any other nation. This is true whether of the smaller sizes held in stock. A man may buy now, as at any time, and it is inclination prompts, and the value type of the mits or his inclination prompts, and the will be will

glass pipes of large diameter have not been successfully produced, it has been predicted by cessfully produced, it has been predicted by several large glass manufacturers that it will not be long before some method of casting these pipes successfully and cheaply will be devised. Made similar in form to our present cast-iron pipes with some suitable device for a joint, GLASS, GAS AND WATER PIPES.

the Holotburian. There are no organs of the holotburian. There are overgans could never develop into fine, an ambulacral sucker never develop into fine, an embulacral sucker in the uniform type for adaptation to walking or running. The mollusks have resolved a higher level in their efforts to attain an articulisted structure than the echinoderms. Primitived structure has limited progression in both tive the mollustic manner in the first structure has been sucked as a second of the first structure has limited progression in both types.

(To be Continued.)

EXPAUSION AND CONTRANSCA.)

IRON,—A cubic foot of greate, Water And I absorb one once of water. Water, when trozen, has an expensive force of 28,000 pounds to the sequence of water. Water, when the square inch. One can scencely imagine the tenth of water can percolate. The square inch. One can sericely imagine the tenth of water water where there are joints or certainly be subjected absorption going on over the entire aurities of the stone, and water can percolate. The absorption going on over the entire aurities of the stone must certainly be subjected according to the stone water descriptly in the entire aurities of the extent of the entire aurities of the extent of the entire water described by the entire and the factor of the entire the entire the factor of the Highlith of the paralline treated promises to the waite and the indications are that the entires of the paralline treatment to will recoilect the rapid wearing away, from the activation of the paralline treatment to the found, these elimatic conditions do not make where most of the paralline treatment to the found, there indications are that the order will not be again needed for many years to the waite and the indications are that the entires of the form of the paralline that the entire to the entire of the entire of water benefit into a spands and contracts inch for each degree of, and when expends the the entire the the waite of the weight on the across the building and the weight on the across the building and the weight on the across the building and compared on the paralline the entire the the weight on the school of a factor of the across the building and contracted of the paralline of were then heated, and, when expands do were then heated, and, when expands of were then heated, and, when expands of were crowed into the bars drow the weight on the operation, the weight were then the paralline of special or the operation, the weight of the paralline of special or the operation, the weight waits of the weight of the operation, the weight of the

Were brought into their original position, were brought into their original position. Theorems.—It is well known that geologists have not infrequently compared the comparison have based their theories as to the formation of coesns and continents, with the formation of coesns and continents, with the markains, the comparison that are the straining to the latter. According to Cheneworth's Geology, however, recently published, the comparison thus made is erroneous, insamuels are the strain of a fresh plump spublished, the comparison thus made is erroneous, insamuels when the strain of crommersence. Consequently when the interior body of the applie is reduced in size by evaporation the skin becomes reduced in size by evaporation the skin becomes matter cooling into solidity, would be entitled to contoried, would then sink, so dense portions of the earth would then sink, so the center, and that the center of the earth would then sink, so cheep portions of the earth would then sink, so the center, and that surface became condensed by the center, and that process would be center, and the surface became condensed by the one of or ontrolling, it would immediately gravitate toward the center, and that process would be contined and congelation proceed from the interior and congelation proceed from the interior toward the eartises, inside and congelation proceed from the interior would interest special perior toward the interior, as the present system of toward the interior, as the present system of geology requires.

geology requires.

MAN'S INSIGNIFICANCE.—Somehow, when a man's mind becomes really suggeded—say like the Baron Humboldt—and he is able to place in focus more and more of the cosmos of the common place in focus more and more of the cosmos of which he forms a part, he behings he as the outset of his life regards as the stregest get smaller and smaller, till at last that that it is only through a comes so insignificant that it is only through a process of mental microscopy he can discern his process of mental microscopy he can discern his overwhelming important, and a mountain is smaller than an ountain, and a mountain is smaller than an elephant, and a mountain is smaller than the world, and a mountain is smaller than the world, and a mountain is smaller that seed compared with the run, and the sun is sen itself is a mer emote in the dust-oloud of spheres that stretches out through the hoyond the reach of thought.

SOME ALLEGED NEW ELEMENTS.—A. Pringle

Some Alteorn of monegate.

Some Alteorn of we Elements.—A. Pringle claims to have discovered at new anbetances in some lower silvented at the solonest may be often in a substance and to be metals, and which he calls heaper resembling selenium, and which he calls heaper risium. One metal is like iron, but does not give the rhodenste reaction, nor that with tannin, and choiser seambles leaf, is quite leather and volatile, and forms yellow and green saltes; and torms yellow and green saltes; and torms yellow and green saltes; another is alight gray powder, and the last is a light gray powder, and the last is dark in color. For three of these elements, is dark in color. For three of these elements, is dark in color. For three of these elements, is dark in color. For three of these elements, the author assigns the equivalents 95.4, 43.6, and 74.

A FAMILIAE illustrations of the rapidity with a concernate also disappear, the world controlled in the rapidity with a controlled in the spores of functional controlled in the controlled in th

SOIENTIFIC PROGRESS.

Psychic. The Three Forces—Physical, Vital and

The impetus given to the Prezer.]

The impetus given to the study of histology by the discoveries of Schwann and Schleiden in 1837 has been gaining force year by year. As different branches are referred to, we may say something of later workers in this is different for the property of the property of

emroH bezinggro

Have from their so flater workers in this immense to maintain the flate from their embryonic stage on ward, be find to maintain their existence, first, by a battle for food; second, by a battle for fresh, by a battle for food; second, by a battle for the food; second, by a battle for safety. There is the food; second, by a battle for ward; there is a breessary food must be obtained (there is a limit to this), a struggle ensues, and victory mark. A lowly developed organism is only site, and victory falls to the organism food organism is only mark. A lowly developed organism is only site, and victory for organism is only site, and we conditions. This is true of plants as well as of complex one is their developed organism is only conditions. This is true of plants as well as of a same and further or set for the certain the conditions of the careful and the conditions of the careful and the conditions of the careful and the conditions of the food survival the best fitted to survive in their descendants. They can and truits. Space will only permit us to slind the food survive in their descendants. They can and truits. Space will only permit us to slind the food organization of the feetilists for devery acceptable soon begins of the food or survival the food or surface of the fertilists of the food or surface of the fertilists of the food or surface of the fertilists of the food or surface of the fertilist of the food or surface of the fertilist of the food or surface of the food of the fertilist of the food or surface of the fertilist of the food or surface of the fertilist of the food of the fertilist of the fertilist of the food of the fertilist of the food of the fertilist of th

Stomach Sac

In the many-oelled animal, In three ways can this bollow globular animal, vary.

In the many-oelled animal, and three ways can opening, tentacles may develop about the command.

In the many develop about the pening, tentacles may develop about the mouth, and radiated body divisions, thus passed ing from a single axed Gastrula to a double-axed ing from a single axed Gastrula to a double-axed ing from a single axed Gastrula to a double-axed ing the pening the opening and the coper to present of the pening the pening the opening a side, they give us the set of the connected own upon the peter of the confidence of the confidence of the confidence of the progressive over the two preceding.

They endeavor to reach it, but there is a limit of their progressive over the two preceding. They endeavor to reach it, but there is a limit to the onlines of the complete develop keach to the marked advantage over the two preceding the minister of a compect, but there is a limit to the univarive has tended to develop keach the minister of compete develop keach the minister of complete develop keach the ministre to conceal it from its enemies of locomocion (how superior are the Haxible stands arms could not develop keach tramed, hody-limbed vertebrates III). The tramed, hody-limbed vertebrates III). The gain the action of locomocion (how superior are the Haxible tramed, hody-limit in the confined vertebrates III). The gain the advantage of a lengthened body is obtain the confined arms; and the vertebrates III). The gain the advantage of a lengthened body is obtained a trans, and the local stands of the read arms, and the advantage of a lengthened body is obtained to be supplied to the water.

Both the supplied arms, and the advantage of a lengthened body is obtained arms; and the advantage of a lengthened body is obtained arms; and the advantage of a length per animal and whith long, and the supplied arms, and the advantage of a length per animal arms, and the advantage of a length per animal and whith long, and the supplied arms

Holother arms, and the Holothurold.

Holothurold.

The this last a most wonderful effort to approach the worm type is perceived. Unlike the proach the worm type is perceived. Unlike the orbite celinoderms lies intestinal axis becomes the worm type, a dorsal and ventral surface exposed to conditions which modify it. Of its dorsal surface of inspect in the most above of subplears in the most advanced dorsal surface disappear in the most advanced the conditions of the word word in the distinguishing radiate structure is only the three warmed one pering recting the distinguishing radiate structure is only above the subplear in the word structure of the subplear in the word words of one form to the wory worge of modelber is naturely supplear in the subplear in a structure of model by the subplear in the subplear is not the subplear in the subplear in the subplear in the subplear is the subplear in the subplear in the subplear in the subplear in the subplear is the subplear in the

fast lines).

The calcareous "srmor plating" of the lower forms of Echinodermates also disappear, the forther sine.

Attend I. and II. A fin-like expansion of the body enables the first to swim, and the development of suckers on their radiated arms enables them to draw their bodies slowly slong, head

stirring in one onnoe of beef tailow. Take of trom the fire, and when it has partially osoled, it ome the fire sole is of alcohol. If this sole is of alcohol. If the post of the one take to repidly, it must again be placed over the fire; but great eare must be used to keep the alcohol from taking fire. When well incorporated and ool, put it in the nees or glass bot rated and ool, put it is the nees or glass bot selved and ool, while the must on the property as selved that the must of must be the mast own was inported from from the mast own was inported trans-

AMERICAN WRAT.—During the last two years the laboratory of the United States Departs the laboratory of the United States Department of Agriculture has made snalyses of American wheat a great number of samples of American wheat from all parts of the country, and grown ander various conditions of climate, soil and culture. These analyses show that American wheat contains its and the same per cont of san, more oil and less vegetable per cont of san, more oil and less vegetable fiber. The small distribution oil and less vegetable diver olimate. These are all decided advantages in the qualities of American wheat as compared with that of the growth of the countries.

To REMOYE PAINT FROM GLASS,—An exobject of draws and the confer worth of oxelic soid
desolved in a pint of hot water will remove
paint spots from the windows. Four a little
paint spots from the windows. Four a susting the
but be sure not to allow the soid to touch the
but he sure may be quickly cleaned with
the bottle and putting it out of the reson of
the bottle and putting it out of the reson of
the bottle and putting it out of the reson of

METAL WECKTIES.—Scarfs and neckties of metal are a new German invention. Gold, plettium and silver strips are welded, after the mossic style, upon a metal ground, prepared by the incandescent process, and finally elongated by rolling into long sheets or strips. The colors are yellow, red, green, white, gray and colors are yellow, red, green, white, gray and black, and the scarfs, being indestructible, are considered of practical value.

EEMEDY FOR STRES.—Styes are such troublesome little ailments that the following remedy
for their oure, recommended by M. Abadie,
may be welcome: Dissolve one part of borsoio
may be welcome: Dissolve one part of torsoio
may be parte of distilled water, and drop on
some of this solution with a wetted piece of
wadding, several times a day. It is said not
wadding, several times a day. It is said not
wadding, several times a day. It is of
the content of the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
the content of
t

Signs of Death.—M. Lessenne claims that a section of Death.—M. Lessenne graph of eath is the permanent points of a wound made in the stink by puncturing if the with diams. If the person he living, blood will nearly follow the withdrawal of the will nearly follow. The withdrawal of the wound will close at once. The puncture made in the skin of a dead person will remain open, as if skin of a dead person will remain open, as if

In BUYING TAREE-LINEN it is well to remember the first the finer and smaller the pattern, the borger it will be likely to last. Tablecloths of any kind are said to wear much longer if a double-faced, thick canton flannel is first spread on the table. It smooths the edges, and is much softer and more agreeable than without it.

Success of Emelian (0.07erantion.—The English co-operatives have a bank whose transcatons amount to \$80,000,000 a year. They have 1400 stores and a business of \$150,000,000 nmbers receive as amount and profit of \$15,000,000. Their profits durnal profit of \$15,000,000.

UTILIZING THE CACTUS PLANT,—In Mexico a company is being formed to utilize the escence plant. The oil will be used as a labricant, the fruit for eating, the latter being so juicy that some years ago, during a severe drought, thousands of eatile were saved by esting this fruit.

IDENTITYING BURNT BILLS.—The experts of the United States Treasury lately identified \$50 out of \$100 worth of bank-notes which had been burned to a crisp in a tin can; also \$40 out of \$200 worth of notes chewed up in a proket-book by some pige.

THE EGG AND ITS SHELL.—After an egg has been laid a day or more, the shell counse off casily when boiled. If the contents of an egg adhere to the shell after boiling, it is a sign the egg is fresh.

A VALUABLE PATENT.—George Westing-house, Jr., inventor of the air brake, is worth \$9,000,000. "This is, perhaps, the largest fortune vor made out of wind," says the Atlanta

Keroseve Lane Smoke.—Ceilings that have been samped by a keroesone lamp should be weahed off with sods-water. Grained wood should be washed with cold tea.

THE MANASAS LANTER-FIELD. The famons battle-field of Manassas is to be inclosed by a scone will and kept for a public park by the ladies of Virginia.

THE Silver King mine, Arizons, has about 250 miners at work. The capacity of the mill has been increased.

USEFUL INFORMATION,

A bit of Arr Stock of the most dreaded insect invader is the white ant, writes Charles freed, in St. Nicholas for June. In St. Nicholas for June houses are dome-shaped mounted for the respect of the presence is not suspected within the leg of a table and descence is not suspected within the leg of a table to object which they attack, often reducing it to object which they are such the leg of a table, defined a manufacture of the such factor of the such descend for an author, and descend one wight, an officer of the English army while an in the office of the control of started with affight, and the next instance they attack they are such as a service of the such at the such them to be described by a rumbing sound, then the such them they up through, the attack they are an in and day all about, leaving them in and its object the misson out until a great part of the such mate work them out until a great part of the such manufacture.

of manufacturing into the princes.

Turing in the Oil Business.—The business of manufacturing into thoirs has increased to manufacturing into thoirs has increased to manufacturing into thoirs has increased to wears. A little over 50 years ago, there was so years. A little over 50 years ago, there was so years have no demand for under the moin of the was supply was made up from old sun-barrels. But the content of the particular supply was made in the collecting and conveying coal oil foots up to the neor them segregate of more than \$25,000,000. According to the vania. At 15 cents a foot this thoir would require, allowing 40 yearing, and would require, allowing 40 yearing, and would require, allowing 40 yearing, and which, at 50 cents a foot, would amount to which, at 50 cents a foot, would amount to office to the well, \$1,000,000. Allowing an average of 100 feet which is the only supply would cents to the well, \$1,000,000. Allowing an average of 100 feet, and one to the well, \$10.00,000. It would take \$1,000,000. It would require \$1,000, \$10.00,000. It would take \$1,000,000. It would take \$1,000,000. It would take \$1,000,000. It would the supplies to a well, it would require \$1,000,000. It would take \$1,000,000. On \$1,000,000. It would take \$1,000,000. On \$1,000

ANTI-CORROSIVE VARNISH,—Cosmoline and cosmoline and cosmoline and cosmoline and cosmoline and cosmoline are new substances brought out in England. The cosmoline is a soft, gressy material, somewhat of the observed in color. Though the viscous, jelly-like products of paraefter in color. Though the viscous, if inc, but darker in color. Though there is of machine, but darker in color. Though there is of machine, but darker in color. Though there is of machine, but darker in color. Though the resonal principle of the bright parts of machine cash to stand and standard the control of the color of the c

THE MOIDING SAND REGION.—The region around Albary, N. Y. iunnies the largest be largest by fact of the molding sand used in the United Jakese, in the United Jakese, in the world in deposite from the vive on the west side of the Hudson, as far south as for south as far south of the Hudson, as far south as sold of the Hudson, as far so sold of the Molawk up as far as Schenectady. There are three grades, bridge-girders, etc., the coarsest, Along the bridge-girders, etc., the coarsest, in the bridge-girders, etc., the coarsest, in the privilege of taking the sand toon for the bridge of taking the sand from the land. In the land so dig and single of taking the sand toon the land is once, but its quality is better when it is piled up and left over one winter.

THE LAWF WICK.—Experiments show that the wick show the wick there is no economy in turning down the wick of a lamp notwithetending that the popular theory and preotice is to the contrary. When a lamp is lighted, there is, at first, a time when the same is lighted, there is, at first, a time when the same is to but after the lamp and chimmey are thoroughly not all mother fill supply of oil is established. It, with this supply of only is supplyed in the same ratio; but ply of oil continues in the same ratio; but ply of oil continues in the same ratio; but of it is not consumed in the flame, but is volatitized into gas, which seems ratio.

Mushroom Cultures is to be prosecuted on a large scale in the abandoned cement tunnels of a cement company at La Salle, Ill., and a supply of spawn or seed is expected from France. The company interested at first proposed to put in beds sufficient to ship 100 bushels of numshrooms to Chicage overy day. These funging of the reject every prolific, and, if desired, two crops can be raised every 24 hours by simply clipping of the heads. Mushrooms sell for 30 cents per prolific.

Ligoria Greeting Tax. — The so-called 'Fernch Master', so long theore a 'Fernch Master', so long to made by melting one pound Greeting Wax." is made by melting one pound of common rosin over a gentle five and

to look upon the watter in a different light, and now declare that a residence in a salederos and now declare that a residence in a sow, bowever, and a consumption. It is process is the germs of consumption must be partieur to live in one of these places in the sole of the sole of

Management of Constipation.

Management of Constipation,

The majority of cases of constipation,
readily oured by the proper regularion of diet
and regimen. Respecting the management of
seases of simple constipation Dr. Andrew Clark,
an eminent English physician, instructs, bis
betters as follows: I. On riging or retring, sip
sticats as follows: I. On riging or retring, sip
could or bot.

2. On rising takes a cold or tepid sponge-bath,
collowed by a brisk general rubbing.

3. Clothe warm and loose; have no constricfion at the waist.

4. Careful strention some of the paid to diet.

4. Careful attention some of the paid to diet.

4. Careful attention some of the paid to diet.

5. Clothe warm and loose; have no constrict
avise of mults, and all coarse, bath,
avise preserved provisions, pies, pastry, cheese,
avise preserved provisions, pies, pastry, cheese,
brid, with meals.

6. Avoid pickles, spices, our twice of moving the
bowels, strong test, and much hot liquid of any
clicit the socion of the bowels are

6. Avoid sitting or working long in such a

7. Solicit the action of the bowels are

8. Solicit the socion of the bowels are

6. Avoid sitting to restract, and he

8. Solicit the socion of the bowels are

8. Solicit the socion of the bowels are

9. Solicit the socion of the day,

11 the use of all stream and be patient in

12 solicit the only. On the furth day assistance

13 solicit the simplest and best will be

14 the use of all stream and more or less solicit

15 so of sease of a maternate daily socion

16 the obwels, artificial helps may be necessary.

16 the bowels, artificial helps may be necessary.

17 the use of all the simplest and best will be

18 solicit showed as the bowels

19 solicit showed as the bowels

10 so at steer the manner of neture, by the pro
10 so of steer and more or less solid
11 the use of all steers and more or less solid
12 solicit showed as the bowels artificial helps morning

18 solicit showed as the morning

19 solicit showed as the bowels are the solid
10 solicit showed as the bowels are an or se

SLEEP A PERVENTIVE OF HEADACHE.—A solution of the nature of the case, "Sleep, if select at the right moment, will prevent an attack of nervine writer asys." Sleep, if select of nervine solutions of its coming, they can notice that it begins with a feeling of weariness or heaviness. This is the time a select of an hour, or even two, as nature guides, will offectually prevent the headache. If not taken just then it will be too late, for, after the attack is far into the might, perhaps. It is there is a strate the people way, it is imposable to the the select of the intervent in these days for doctors to 'forbid having their patients waked to take medicine if they are select when the hour comes round, that the people have learned the lesson pretty well, and the people have learned the lesson pretty the rich the sick than medicine. But it is not so well, and the lesson pretty the they make the lease is better the sick than medicine. But it is not so well known that sleep is a seven in the select in the select well. It is not so ive of disease—better than tonic regulators and ive of disease—better than tonic regulators and the lates."

DANGEROUS DRINKS,—The Philadelphia News is suthority for the following: "A bartender plaintively bewailed the necessity of having to rub congesled drops of sticky beer off the bart. They not the wood, do they? Herefore of one seeking compassion, 'they? Herefore's 'They not the wood, do they? Herely repeated a beer-bibbler. 'They what in the name of common sense does doe to my stomach?' Replied the manipulator of drinks: 'It is beyond me to tell. Let me show you stomaton acres do to my shore of raw mest on enembing.' He placed a piece of raw mest on something. He placed a piece of raw mest on something. He placed a piece of raw mest on meant had dropped upon it a small measure of an imported ginger-ale. In five minutes the meant had parted into little pieces, as though backed by a dull knife."

FOR PALTING FOR TLOORS.—Some months ago the floors of many Austrian garrisons were painted with tar, and the results have proved so uniformly advantageous that the method is becoming greatly extended in its application. The collection of dust in croacks is thus preventing of the eye has been noted. Cleantiess of the form has been noted. Cleantiness of the form has been cotilitated and a consequent diminution in irritation of the form of the some familiar of the form and the constitution of the eye has been clearly added. The coording of tar is inexpensive, requires renewal but once a year, and presents but one disadvantage, namely, its somber color.

PREUMONIA EXPLAINED.— It is generally supposed that preumons is due to the acotapposed that preumons is due to the acotage dental penetration of specific miorobes into the Yakem, Dacoud, a Parent be observations of M. Jacoud, the disease really results from the development disease really results from the development permanently present in the system. A chief primanently present in the system. A chief preum of such development is a sudden condition of such development is a sudden collil, which explains the frequent coincidence of lung affections with about to change of temperature.

EFFECTS OF IMAGINATION.—A young man in Philadelphia was hurt at the locomotive-works and two physicians said his leg was broken. After he had been in bed a week another doctor was called who said the limb was not fractor was called who said the limb was not fractored, and the young man at once got up and tured, and they difficulty.

GOOD HEALTH,

Mrs. Dr. Cook's Cancer Treatment.

Odor of Fresh Blood,

Marvelous Curative Powers in Pulmo-nary Troubles.

Although consulting and the powers in Fulmolated as completing and the powers in England

Although consumption is as common and
lated a completint in South America as in any
Oution of the globe, says the New York

Muil, there is a class of persons resident in that
never to have appeared. These are the imbabalenghtered and dressed, and where service is said
slaughtered and dressed, and where sometimes
the manufacture of beel extract is carried on.

A gentleman recently returned from the Argentine Republic, in talling of the subject with
any country, that is, South America and
any country, that is, South America and
any country, that is, South here is the different office chose to carry away, was stacked out
the plains and were are the befores in the different office chose to carry away, was stacked out
any to the contry, where and are stall known
on the plains and were and are still known
on the plains and were and are still known
are and form a little colony by themselves,
the open country, generally some distance reployed in the business live within the actiliance
are and form a little colony by themselves,
the open country, the colony by themselves,
the open country, the colony by themselves
are and form a little oflony by themselves,
the open country, the season of eattle are
the open country away, was a stacked out
the plains and were and are still known
the plains and the season of colony by themselves,
the open country away, was stoled are searly the country the optical
are and form a little oflony by themselves,
be open country, the colony by themselves,
the open contry, and a colony by themselves,
the open contry, and a colony by themselves,
the open contry, and a stoled on the colony by themselves,
the open contry away, and the colony by themselves,
the open contry the colony by themselves,
the open contry away and the colony by themselves,
the open contry away and the colony of the colony
to the colony by the colony of the colony
to control away and the colony of the colony
to colony by th

### Mining Summery.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

of southern Monterey county, maybe a short description will by the Estrells creek, in a beautiful little San Miguel up the Estrells creek, in a beautiful little San Miguel up the Estrells creek, in a beautiful little should be soon to be soon CALIFORNIA.

SUTTER CREEK.—Amador Sentinel, Oct. 5: A large burner of street are at work on the Wildslarge number of carpenters are at work on the Wildslarge number of oct. 5 and it is expected that it will be up of be up in man mill, and it is expected that it will be up of the more order, All the mechanics hat could be possitive been put to work in the more Hall mill will are neighborhood of ruo feet. They have down in the reighborhood of ruo feet. They have encountered a strata of bard quarts and on the strength of the atock is raising. Repairs on the Amador Reduction Works are nearly completed.

Qalayery

If the stock is raising, Kepairs on the Amador Keduction Works are nearly completed.

\*\*OBISPOTES.\*\*

\*\*OBISPO

DARWIM MINES.—Hayo Independent, Oct. 7: The Defence continues to yield plenty of good ore; all of the befance continues to yield plenty of good ore; all of fact is shipped to San Francisco, as usual. As fact as a miners can be found they are put to work in the mine. J. C. Eddy sent out a crew at see we are secongly not hand for a good run. Mr. Eddy base also got an interest in the Promontory mine, near Darwin concerns and mine and mine, and more men will now be put to work there. Mr. M. G. Esiman was in Darwin a few days ago. Mr. M. G. Esiman was in Darwin a few days ago. Mr. M. G. Fairman was in Darwin a few days ago. Mr. M. G. Fairman was in Darwin a few days ago. Mr. M. G. Fairman was in Darwin a few days ago. Mr. M. G. Fairman was in Darwin a few days ago. Mr. M. M. G. Eddy lim the for want of more mechanics. At the Lucky lim the for want of more mechanics. At the Lucky lim the wasta amount of work is being done and ore taken out. Chloriders in the district are making good war. Chloriders in the district are making good was as good to be supplied to the work is being done and ore taken wasted or condition of the whole Darwin district the mass of ore out of the mine without breeking it up. If it could have been preserved whole it would have been the finest specimen ever sean in a collection of ores and would no doubt have found a place in the Slate cabinet.

Monteerly.

SPANISH RANCH.—Cor, Plumaes.

S. Locations are being made at a lively rate, and the work of prospecting and development is being purished work of prospecting and development is being guide, is the most prominent prospector at present, purished in the first prominent prospector at present roads, boarding-bouses, quartz-mill, etc. It is safe to predict that next spring and summer will witness to predict that next spring and summer will witness the lively being the made, There can be no question this county. From M. Matheson I learned that a party of oppilalists are daily visitors and investments are doubt of the richees and presented that a face to the richees in the lively party of oppilalists have bonded the Little Galifornia ments, and only needs deeper working to place it for many years, and only needs deeper working to place it Howland have refused a handsome offer for their neath, discovered mine. They have a bonsans and Howland bave refused a handsome offer for their standard on the list of paying mines, has the discovered mine. They have a bonsans and ser satisfaction to their it is completed in the what in tunning order, but is completed successing the most of the refused a bardsome offer to their structed is now in running order, but is completed to lie idle owing to a scarcity of water.

Crownerse of the refused a bardsome offer for their structed is now in running order, but is compelled the owing to a scarcity of water.

Crownerse of the contract of the contract of the own in running order, but is compelled the owing to a scarcity of water.

mend.

In the few parts of the folial distributed of bad manage—

In the first parts.—Cor. Placer Republishan, Oct. S.

In the first parts the mine looking better than ever. The mill conshet about 40 extrodact of gravel last was run only 2% downing to the scarcity of was run only 2% downing to the scarcity of was run only 2% downing to the scarcity of was run only 2% downing to the scarcity of the only 2% downing to the scarcity of was run only 2% downing to the scarcity of unnel into the Hog's back ground, near the Secret funnel into the Hog's back ground, near the Secret funnel into the Hog's back ground, near the Secret funnel into the Hog's back ground, near the Secret funnel for a few days. Work continues in the drift from the last uppaise and the stop will be expected that gravel time for a few days. Work continues in the drift from the last uppaise and it is expected that gravel from the last uppaise and it is expected that gravel the first property of the continues of the continues of was the drift gravel. In the drift of the first property of the continues of the continues of was the drift gravel. In the drift gravel in the drift gravel. In the drift gravel was the first property of the continues of th

edge."

THE EAGLE BIRD MINE,—Tyranscript, Oct. 6;

The Eagle bird quartz mine of Washington township, in which work was suspended several weeks ago an eccount of the unexplained disappearance of suppt, Shattuck, who left the financial affairs badly muddled, is likely to be started up again before the singlements to that end are now being made with anguments to that end are now being made with sangements to that end are now being mid somisting the supplex of the best mines in the county, its mudbles being generally attributed to bad management. Horouragine or alley.

Horouragine Cholsme valley.

Dec Gushine Chass Valley Union, of the felling of the value of one has just been cleaned up at the Fertin mill, and they yell and they yell of the value of one was weighted and they yell was 50 pet ton. The coek was weighted and the wield was of extra good quality, as the amalgam regid was of extra good quality, as the amalgam regid was of extra good quality, as the amalgam restricted over one-half. The one was from the min conted over one-half. The fore was weighted to for a feet in thickness, and occasionally specimens can be taken out all the way from a depth of 10 to 50 feet, with the course of the mine and was average over in the vent. It is the intention of the owners to immediately erect a whim and go to when the control of the owners to immediately erect a whim and go to the owners to immediately erect a whim and go to of the owners to immediately erect a whine and go to next week. A great deal of work has been done on next week. A great deal of work has been done on the work week. A great deal of work has been done on the work week. A great deal of work has been done on the work of the first of the owners to intend starting a new tunnel and they will only have to run 150 feet before they cut the leaves intend starting a new tunnel and they ledge.

AMADOR CITY.—Senting, Oct. 7: The Gover Some very rich role, This cloud.

Co. are running their mill steadily and are curshing some very rich rock. This mine, which has nade such developed acuch large bodies of or diductive and er long will steadily and are curshing to or of late that its permanent seem in state on the following some very rich accoveries and developed acone far mong the company which large, and ere long will be placed among the diductive of diductive and even by their large body of ore. The company will soon increase their milling capacity to an extent that you their large body of ore. The company will soon increase their milling capacity to a diductive diductive their state of the placed among the company will be such that the company of the state of the company of ore; gold is plainly visible to the staked eye for or of such water is shut down, but the owners are concount of water is shut down, but the owners are concount of water is shut down, but the owners are concount of water is shut down, but the owners are concount of water is shut down, but the owners are concount of water is shut down, but the owners are concount of water is shut down. But the valid or state of the ord in state of the ord as a state of ord or and the state of ord in destroying proceeds and is fast as second as the capacity and the mine and that the transmit and the state of the concount of water is shut down, but the mine and its fast of the concount of water is shut down. It is in the long-proceed as rapidly as possible. The indicates put it operation the mine and its the the ord or shut water or water is shut down, but the mine state or one of the contract of the mile state of ord such which with the contract of the contract of

Monteprey.

Monteprey.

PETROLEUM.—Cor. Salinas Index, Oct. 6: Upper Cholsane saley in Monteey county will soon become famous the world over on account of its standy tunning a stream of oil. Before "tile" was struck in Pennsylvania that position over which the struck in the second tamilies; but presto, when oil of deposit rested was owned by a for of poor half- will be just so who struggled hard for a livelihood will be just so which all those who oil second with all those who over the struck all these poor people became rich, and it will be just so which all those who of the struck of the struc

to lie idle owing to a searcity of water.

CRÓMBERG MOTES—COCA, Plumas Advisond, Oct.

8: From what I can see in this section, there will be quite a boom in mining next spring. Bennett here will start in a few days to run rheir incline.

Dangborst & Co. have struck gravel in their tunnel at Hartery, Bell & Co. a see still unning their tunnel at the bead of Poplat creek. Farties are prospecting to the bead of Poplat creek. Farties are prospecting thing, Heath & Shipman are ground-sluicing at thing. Heath & Shipman are ground-sluicing at thing, Heath & Shipman are ground-sluicing at the bead of Greenborn, Mr. Stroog of San Francisco has been up to the Heath mine and informage the company. Mr. Buodhard in the mill put up at that place in the spirits. Mr. Buodhana is unning a tunning at unnant of a tunnel for a spirit. Mr. Buodhana is unning at unnant of the spirits of the spirits of the spirits of the spirits. Green in the control of the spirits of the spirits of the spirits of the spirits of the spirits. Green in the control of the spirits of the spirits of the spirits of the spirits. Green with a full force of men. JOHNSVILLE,—Greenville Bulletin, Oct. 7: Al-

Plumes.

TUNNEL.—Placer Herald, Oct. 7: J. B. Hob-acon is running a tunnel along the lead in the Drum-mond quartz mine. The tunnel is 190 feet in length and shows rich rock the whole distance, which as-sayes from \$450 to \$800 pet ton, Mr. Hobson, besides other valuable mines, owns a one-ninth in-terest in the Cape Horn, Forks House and Alameda claims, according to the county records.

CON, CALIFORNIA AND VIRGINIA.—Are doing the usual amount of work in the mine, and extracting the same amount of work in the mine, as a stoppage of the mills for four days, making the necessary of the mills for four days, making the necessary up Thursday night, and everything worked splendally. Forly stamps at the patiety-mill and so pans at the pan-mill were started.

ANAOSE.—The Savage shaft is being put in thorsary and the part of t

in the character of ore mentioned,

SEGREGATED BELCHER.—Have succeeded since feel for the character of ore mentioned,

SEGREGATED BELCHER.—Have succeeded since five last report in getting another five south end of the line and uppear so or 25 months and five feet from the top of the drift lest sea wide as the raise, and it is considered. The top of the to

CROWN POINT.—Virginia Enleyprise, Oct. 8; The southwest drift on the 400 level struck quarts. The southwest drift on the 400 level struck per ton. It is now in rat feet, or about 41 leet east of the face of Mo. 3 crosscut, west ledge. It is nine feet in the character of ore mentioned.

Washoe District.

YOUNG AMERICA.—The Young America cleaned up for the month of Sept. \$53,000 for st days' run, Verker of the month of Sept. \$53,000 for st days' run, Verker of Sept. \$53,000 for st days' run, Venture.

Venture.

Venture.

Venture.

Venture.

Venture as for stopped. The pulse trock brought in the Ore Angeles of the brength of the venture set of the present of the pulse of the present of the pulse of the puls

WIDE AWARE,—Mountain Messenger, Oct. 8:
WIDE AWARE,—Mountain Messenger, Deen struck
We hear that a very good prospect has been struck
is no reason why these should not be rich digginge,
in the Wide Awake drift claim at Asbama Hill. There
is no reason why these should not be rich digginge,
In fact there is every reason to believe that the
Monte Cristo channel came from Crayorott ridge.
Younce America.—The Young America cleaned
up for the month of Sept. \$\$3,000 for st days' run.

THE GEORGEME MINE.—Walket Lake Bulletin, and a repain, and a custing nated and a custing nated by the GEORGEME MINE.—Walket Lake Bulletin, Oct. 6: The shaft of the Georgene is now down from the third level was begun on Monday. Drifting and the third level was begun on Monday. In the from the third level was begun on Monday. In the second shaft level connection has been made with the first level and prospects are very lavorable. They now have two bodies of ore in sight, and levels will show an extension which will pay diviving the level will show an extension which will pay diviving the level will be considered as the claim of the third level will show an extension which will pay diviving the level will be considered to a contract of the contract of the Lapanta are in a first of thous shift has ground that is favorable for the location of a rich powers are see getting considerable good one in their mine, the Hartlord. The lessees of the Lapanta and bowers and contracted at the Carafield mill from their mine, the powers are see tening sider bet great lead to do see the power and chart has its favorable for the location of a rich powered at the Carafield mill from their mine, the worked at the Carafield mill from their lord of ore powered at the Carafield mill from their lord of ore and their later and Shannon had a lot of ore worked at the Carafield mill from their lord of ore or in their later when the lapanta and their that men are subjoyed on their lor min tithrough a mill; she will reame shortly. We developments are the order of the day in the form it their mine, the crame shortly with their with their control of their power of dirt that netted a lidy arm without harmy for mine for the later when the control of the surface of dirt that netted a lidy arm without harmy for a treat the control of the surface and the surface

Hawthorne District.

IMPROVING.—White Pine News, Oct. 8: Deputy Sheriffe, The News, Oct. 8: Deputy Sheriff Lyons, just in from Cherry creek, reports from the mining provings. The Exchequer people are meeting with success, and Charles Kenny is taking some good ore out of the old Star mine. The Star mill is to be put in repair, and a crushing made this winter.

Oherry Creek District.

A GOLD MINE SOLD.—Silver State, Oct. 7: Yesterley the Battle Mountain District.

A GOLD MINE SOLD.—Silver State, Oct. 7: Yesterley the sale of the Bunker Hill and Dwarft gold enday the sale of the Bunker Hill and Dwarft gold mines in Battle Mountain District was consummated well known throughout Nevada, disposed of the wines of the contained which mines to a Chicago and Denver syndicate of which mines to a Chicago and Denver syndicate of which mines to a Chicago and Denver syndicate of which feet sale includes 1500 the mines as a Chicago and Denver syndicate of which feet sale includes 1500 the mines as a Chicago and Sease. The price paid for the feet sale includes 1500 the mines are again attracting the teering to requestly to reduce the ores. The mines are sgain attracting attention and faster with a sale of the ore septerably gold-bearing cannot alwer. The mining interest, sale in that in width, the State will eventually attain a place in width. Wery little attention was paid to gold mines in Nevalue, but now as the State, and the form the front the State will eventually attain a place in the front the State will eventually attain a place in the front state of the strength of the state of the

Battle Mountain District. BENTON.—Are drifting on the 800 level, Sterra Mevada. South lateral drift extended tog feet; total length, 350 feet. BALTIMORE, —Are handling the water with the imp, and are extracting ore and exploration is pro-

Andrea.—Have finished repairing the drift on the 250 level, and are drifting east on the 240 level in 32 promising formation.

LADY WASHINGTON.—Work of repairing the drift on the 725 level is about completed and work in the face resumed.

Works are in excellent state of repair.

BULLION,—Usual progress is reported in the main east drift, which is now out about yet feet, and is to feet about to feet, should be feet distant from the main east drift is now out about a Scorpiou,—East drift on 300 level has been adstract. The face, and is now 979 feet distant from the shalf. The face of the drift is in prophyry.

Union Ann Mexican.—Union-Mexican drift, was extended but a short from the Albra Ann Excheques.

Alter easing timbers a portion of the week, and a seek, and a safety of Alpha and Exchequer.

Alter Ann Exchequer.

Explore Alpha and Exchequer.

Explore Alpha and Exchequer.

duffirs in the vent. A few tons of ore were extracted.

ALTA.—Are uprising in the Keystone vein on the Nestone vein on the control of the con

OUNTIDENCE, CHALENGER AND IMPERIAL.
CONTIDENCE, CHALENGER AND IMPERIAL.
Are repairing the troo drift in the Imperial and mines. There is a great deal of virgin ground in the Challenge and southern portion of the Imperial and the Challenge and southern portion of the Imperial of Challenge and southern portion of the Imperial of Challenge and southern portion of the Imperial Could be thoroughly prospected,
GOULD AND CURRY.—On the 700 level west crossed which will the wines earth from the 685 level. Itself can upper money in 150 feet of 150 fe

mine. This work is being prosecuted with energy, as it is believed that a continuation of the cric one body found in the latter mine will be struck in this new shaft on the Oest. Good ore is being taken out of the winze in the tunnel and millied. CONTIDENCE AND IMPERIOR.

The Harrison Bros. are extracting ove from their mine, and they will start up their little mill as soon as sufficient water tuns down the creek.

RULLION.—Bencellle District.
BULLION.—Belmont Courier, Oct. 1: The mines
at Reveille are yielding good ore and the mill is producing fine bullion.

Work.—Belmont Courter, Oct. 1: Work is the grand Antonio mines, and the quantity of ore encountered is good. Supt. As a Eastwood will soon have the steam boiler and esteam engine in place, which will be used to run the crushers. It is expected that considerable builtion will be produced that shall and winter. San Antonio District.

Wild Rose District.

THE PREADER VALLEY MINE.—Sifuer State,
Oct. 6: Supt. McCurdy's report, published in this
Steue of the, Sifuer State, is not only obsering to
to the whole community. The ore has improved in
to the whole community. The ore has improved in
to the whole community. The ore has improved in
to the whole community, and the ore has improved in
state present, and the ore that can be raised and
opened so that all the ore that can be raised and
concentrated will be extracted.

ANSALA

ALABARA.

GOLD PLACERS,—Alasks Pwes Pwess, Sept. 30: Parties who have prospected the Tarkou river this distance of y5 miles, as far up the river as they went. They obtained as high as 80 colors to the partie of the parties of y5 miles, as far up the river as they went. They obtained as high as 80 colors to the parties of y5 miles, as far up the river as they back as they back as they had be been been could not get up the anall creeks to prospect the guided. They say that the Tarkou country is under the could not get up the anall creeks to prospect the guided. They say that the farming of the farming they could regarding the mineral resources of the section. A party started for the headwaters of the section. A party started for the headwaters of the farming they could regarding the mineral resources of that they could regarding the mineral resources of that they could regarding the mineral resources of that account on the they could regarding the mineral resources of that they could regarding the mineral resources of the farming the covers the grown on Forty-Mile creek, with the intendence of the Dominion surface of this route.

\*\*RED GANVEL.—Owing to a heavy out from the mineral recomes dry weiving party, who is now on his way out from the and in the country back a fam in the farming for the summer months this most becomes dry veiving party, who is now on his way out from the and almosphere for a few weeks, it is again set on the sum's the most because and the target of the sum and the cament of now the sum's souple of seasons as the transity the amount of the wind on the sum's souple be thanked out unfaired the weeks, it is again set on the sum's mount of now the graved will be grown as a bring the sum of the summer the weekers, it is again set on the sum's mount to the mineral sum's souple of as reason as a from barg lying to be obtained in the surface country. It is, without not be country, and powder to the same a thing the sum of the sum of the surface, one wonders whether or one of the country. At the pwe

ARIZONA. SISKIYOU,—Idaho Springs Avers, Oct. 7: The Kitty Clyde Co. are sinking their engine shatt with we shift of miners. The Little Mattile began to about so men at work on their property of mere, Tibe Little Mattile began to out of work. The Evally part of last week, consession and the men at work of the modern of the men at the head of Spring guleth, was up the modern of work. The majority of the men at the med to the men at the head of Spring guleth, was up the mental part of the mental form the city lately and left orders for a resumption of work on the miner. The mill at the mouth of Chiesgo creek, formerly owned and operated by Morris, Vincent & Kont, has been thoroughly overthered and operated by Morris, Vincent & Koot, has been thoroughly overthered and presided by Morris, Vincent & Melichtand of Merkeeport, Diesgo creek, with all and winter on ore from the Shafter property. Miceolaus & Allebrand of Merkeeport, or or over the mineral, but was ally conceded to be a west extension of the Little property. Miceolaus & Allebrand of Merkeeport, Mattile, and shows a fine streak of mineral, but was ally conceded to be a west extension of the Little former purpose from the Mattile, and shows a fine streak of mineral, but was ally conceded to be a west extension of the Little month of September, were as follows: Gold, 1187, plane, and the Mattile, and shows a fine streak of mineral, but was ally conceded to be a west extension of the Little month of September, were as follows: Gold, 1187, plane, and the mineral is not less than \$49,752,30 an increase over the New September, as the biggest month's business done at the lieve, is the biggest month's business done at the suppling works this season.

IDAHO.

Tubobarore District.

DIANA.—Tubobrora Times-Review, Oct. 7: Work is been resumed in the face of the crosscut, 150-10 level.

pas been resumed in the face of the chall-touce (pool few). Any owner resumed in the face of the chall-touce was erected during the past week. Carpenters are mow at work on the galows-frame.

NORTH BELLE ISLE.—During the past week, galows-frame, and the ten of the chall of the sea ompleted and the removes a superficient of the remover of the chall point in the mine. Will be a superficient of ore as fast as removed, and start to milling next week, and start to milling next week. Commonwent. Commonwent. Commonwent. The choisting works as fast as removed, and start to milling next week. The properties of the care of the care

DAMO.

WORK AT WOOD RIVER.—Cliffon Clarving, Oct. 5: This greate were in from Clarving, Oct. 7: Mesers, development connected to the Bool-foot level, and a whole strength of the Bool-foot level, and a whole strength of the Bool-foot level, and a whole strength of the result of a trun of the result of a trun of the closed of the tendent of a trun of the clark of the tendent of a trun of the strength of the stren

tibe coming week. This claim adjoins the Wonderfoots and there is no reason to doubt but that it is ness fixed him in the count of the MINING AND SCIENTIFIC PRESS.

Descrete, Co. was a consumering prospecte. On was a constraint of the most sensoring prospecte. On was a constraint of the most sensoring prospected. On was a constraint of the most sensoring prospected by the Character of the most sensoring prospective and therry become made decreased the constraint of the most sensoring prospective and the constraint of the most sensoring prospective and the constraint of the most sensoring prospective and the constraint of the constraint of the constraint of the most sensoring prospective and the constraint of the constraint of the constraint of the prospective and the constraint of the con

all true fissure veins, and extending through to the pending for the pending for a sale of the group, adjuster miner, at Rock Cliff, in this district last section of the Black Range was made in the Research miner, at Rock Cliff, in this district last section of the Black Range was made in the Research miner, at Rock Cliff, in this district last section of the Black Range was made in the Research of the count was commenced, and fair on the lead to the count was commenced, and fair on the lead to the count was commenced, and the lead been gained when a counterer of the care was encountered, which revealed to the work and in was encountered, which revealed to the not length, of the cervice as yet is not length, and in the read to the cervice is unknown. The cervice is marter has been washed away by mander a large careen undermeath. Ladders were in marter has been washed away by mander the cervice is marter has been washed away by mander the cervice is marter has been washed away by water, leaving the walls of the cervice is unknown. The care has concerned the cervice is continued. At the so-called north end to end with a idea of pending and the cervice is the cervice is of pending the cervice is continued. The cervice has been washed away by water, leaving the walls of the care while a fore when the cervice is of pending and the care of the

THAT WATER POCKET.—Park Record, Oct. 8:
About ten days ago a large pocket of water was encountered in the face of the couthwest drift on the southwest drift of the came whether a southwest drift of the drift of the southwest drift of the came widen that another hig faint under the shaft, and the southwest drift of the came whether the shaft of the drift of the southwest drift of the drif

OUARTZ.—Jacksonville Times, Oct, 7: J. M. Casteel will prospect the McDonough ledge near Casteel will prospect the McDonough ledge near pended at the Round Mr. Shafer, a miner lately near the County. B. F. Taber is now enter lately from Colorado, are prospecting in the southern portion of Josephine county. B. F. Taber is now enter a two or three mines of his own, which he thinkes it wo or three mines of his own, which he thinkes it wo or three mines of his own, which he thinkes have a search at the Stanley mines in Evans creek district, which prospects the he times and prospecting it thoroughly. He has not one of prospecting it thoroughly. He has not one of the dump and expects to have a mill at prospecting it thoroughly. He has no tone of quartz on the dump and expects to have a mill at before long. Many placer claims have on it before long. Many placer claims have been taken up in Sucker creek district, Josephine county, by parties from Grant's pass and elsewhere. Excellent prospects have been obstained and a lively mining camp is in view. J. N. Casteel and B. C. Escellent prospects have been obstained and a lively mining camp is in view. J. N. Casteel and B. C. Escellent prospects have been obstained and a lively report that operations are still progressing tworthy in the Hope ledge. The mill is running day and right and crushing ten tons of a larr quality of ore every st hours.

OREGON.

THE MOUNTAIN VIEW.—Butte Miner, Oct. 5; With the exception of a small part over the shaft, the shaft, the old hoisting works of the Mountain View have more commodious structure. The framework of more commodious structure. The framework of the more commodious structure. The framework of the more commodious structure. The framework of the commodious structure. The framework of the structure of th

.ANATNOM

ANACOUND, ADANCEMENT,—Keview, Only and Will Forbis and others.

ANACOUND, ADANCEMENT,—Keview, Oct. 6: Work at the Anacound, amelier is progressing wery fair to the factor of the fair the fair to the fair the fa

many months.

THE MASSACHUSETTS STRIKE.—W. M. Curtis, the efficient manger of the Massachusetts, has a lipe efficient manger of the Massachusetts, has a lore of about a core of men at work around the works. The einking of the winze from the tool the shalf, is one sean in the winze has steadily widened from six inches and last Wednesday it suddenly opened the into a vein from two feet and a half to three feet wide and still widening. The formation is regular, in and the vein, while to the form two feet and a half to three feet and a half to three feet and a half will wind the sample of the formation is regular, and the vein, while some of it apartles and last Wednesday it a well-defined true fissure, and the north at an angle of about 40 edgrees, and the north at an angle of about 40 edgrees, and the north at a new in a well-defined true fissure, and the north at a well-defined to a some of it or and the north at a well-defined true fissure, and the north at a well-defined to a some of it or and the form and the first the fissure, and the total first the some of it or and the first the first the first the form. Some of it, particularly the bromides, will go from 150 to 2300 ounces silly the first to the ton.

SHIPPING AND COMMISSION MERCHANTS,

309 and 311 Sansome Street, San Francisco, Cal.

Agente for Growers and Manufacturers. Charterers of Vessels for all Trades. Agente for the Mexican Phosphate and Sulphur Company's Products. General Insurance Agente.

Have correspondents in all the chief cities of the United States, Europe, Australia, India, China and the principal islands of the Pacific. Furchase goods and sell California products in those countries.

General Agents for the Pacific Cosst of WATIOWAL ASSURANCE CO., of London; BOYLSTOW INSURANCE CO., of London; BOYLSTOW INSURANCE CO., of London;

San Francisco, Cal.

Cor. Fremont and Mission Sts.,

IMPORTERS AND DEALERS IN ALL CLASSES OF

## MACHINERY

SOLE AGENTS FOR

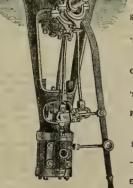
VALUE ROUTERS. ENGINES, BROS' HOISTING

PAKNES VERTICAL AND HORI-

TANITE CO'S EMERY, WHEELS 10DEON ENGINE GOVERNORS. PICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY, OLLO SIFENT GAS ENGINES.

DISSTON'S CIRCULAR SAWS. TORS, TORS, TORS, AND EJEC-NATHAN AND DREYFUS OILERS.

H. W. JOHNS, ASBESTOS PACK-TVNE VND BODFEK SVM MIFTS' ING CO', REPLING VAD PACK-



илснійеку. Таліча в со:3 **т**ооршовкі**й** n. R. Pay & Co.'s Woodworking

BEMEUT & SON'S MACHINISTS CHINISTS, TOOLS, WEW HAVE CO.'S MA-

SICKEORD'S POWER DRILLS,

MEBBER CENTRIFUGAL PUMPS. BUMPS. PURROVED STEAM

STURTEVANT BLOWERS AND EXHAUSTS. EERIN BYND SYM BUYDES'

TURBINE WATER WHEELS. BEVINVED MITTING MYCHINES

**WACHINE WORKS** 110 & 112 Reale Stree (SNEAT & MOSMORT OF TOBES EVANS TH

WELL П STEAM PUMPS, STEAM ENGINERY.

IZL IZZOEDI 20

AND MAILED FREE ON APPLICATION,

Catalogue No.5, Jan I, 1887

CLAYTON

And General Mining Machinery ROCK DRILLS,

Office, 43 DEY ST., NEW YORK Clayten Air Compressor Works, For CATALOGUES, ESTIMATES, Etc., Address



CONTRACTORS, ATTENTION!

BIDS ARE INVITED TO CONTINUE A TUNNEL for intriber partiestbre ground and now in operation. For intriber partiestlars, inquire of WALTER C CHILING.

WALTER C. CHILDS, Glencoe, Celsverse Cc., Cel., or of GLLESPY & CHILDS, 128 Celliorniest., San Francisco.

160% moon MEM LORK OFFICE, 18 BROADWAY

C. A. STETEFELDT, President.

THE RUSSELL PROCESS COMP'Y.

Machinery, Models and Buildings

957 Market St., San Francisco VIEWS OF

Mechanical Photographera,

RUNNELS & STATELER,

FOOMS MITH OR WITHOUT BOARD.

FOR WITH OR WITHOUT BOARD.

Terms, Board and Room, \$1.00 per Day

Laundry Free for the use of Families HARE TO COLD BATHS FREE.

This Fire-proof Brick Building is centrally located, in the Genelicest part of the city, only a half block from the Grand and Palace Hotels, and close to all Eteamboat and Enlivoad Offices.

44 Third Street, San Francisco, Cal.

MINCHEZLER HONZE

For Sale by all druggists.

RACH O RACHINEMIN AND MAINT THIMENE

THE H. H. H. H.

HORSE LINIMENT.

AND KAILKOAD CASIINGS. CAR MHEELS CHILLED

IRON CASTINGS of all descriptions.

MEDAL AWARDED, MECHANICS' FAIR.

STEIGER & KERR,

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. HAS. R. STEIGER,

OIFS. LUBRICATING DNA SUPPLIES MILL

FROM 2 TO 100 H. P., ALWAYS IN STOCK

YACHT ENGINES.

## the full weight of silver spreed upon, and are tested be fore leaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry NOTICE. - All our plates are guaranteed to have

## JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

BATTERY SCREEUS AND WIKE CLOTH

HADEO-CARRON ASSAY FURNACES Agent for HOSKINS'

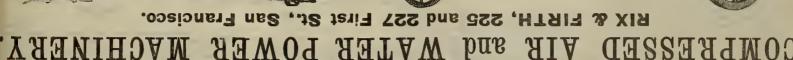
> MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES. FOR SAVING

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

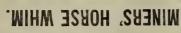
FURNISHED ON APPLICATION.

NOVELTY AND PLATING WORKS SAN FRANCISCO



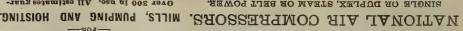


NATIONAL ROCK DRILL.









SINGLE OR DUPLEX, STEAM OR BELT POWER,

All varought from. No gears, no breakage.

All wrought from. No gears, no breakage.

A factor will easily bandle rock or water to a depth is less repairs than any other rice, complete, \$200. 150 soid on this Coast.

Price, complete, \$200. 150 soid on this Coast.

Over 300 in use. All estimates guar-anteed, Send for Circular.

## Retallurgy and Ores.

## SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office. COFD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

ENGINES, BLUESTONE, LEAD PIPE,

SHOT, Etc., Etc. SHEET LEAD,

Under Chamberlin Patent. Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GIZLS, GEVSEMVKE VAD SANDKIES' ELG CHEMICVE VELVKVIAS VAD CHEMICVES' I

114-118 Fine Street, ... San Fra We would call the attention of Assayors, C Mining Companies, Milling Companies, Prospect to our full stock of Eslances, Furnaces, Mullie Slee, Sconfiders, etc., including, also, a full San Francisco.

Troy at different degrees of incoess, and valuable for computation of assays in grains and grains as sent free upon application. Agents for the Patents for the fact of brighten blates. The cit bits well-known manufacturer are (horoughle, and lively places. The sent of the well-known manufacturer are (horoughle, and lively prices.

Nevada Metallurgical Works.

Near First and Market Streets, S. F. NO. 28 STEVENSON STREET,

А. Грокимерт, Меракет. Отев worked by any Process.

Ores Sampled,

Assaying in all its Branches,
Assaying in all its Branches, Waters, etc.
Working Tests (prectical) Made.
Plans and Specifications turnished for the nost suitable Process for Working Ores,
Special attention paid to Examinations dines;
Sinces, Plans and Reports furnished.

Mines; Plans and Reports furnished.

O. A. LUCKHARDT & CO.,
(Formerly Huhn & Luckhardt, )

Mining Bugineers and Metallurgiste.

METALLURGICAL WORKS,

318 Fine St. (Basement., ord Street, - san Francisco

Assaying and Analysis of Ores, Minerals and Waters. Mines Exemined and Reported on. Practical instruction given Treating Ores by im vved proceeds.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOOR WHEELS TESTED

To be leight Company as forms Tabley, Cal., and
stronger cent, distancing all competitors. Band to
stronger of the stronger of the stronger of the

L. A. FELLTON, Nevada City, Cal.

AGRAYS—PARKE & LACY, Sland 28 Fremont Street
san Francisco, Cal.

C. PETERSON, MODEL MAKER, INVENTORS, TAKE NOTICE!

268 Market St., N. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin 2009er and brees,

QUARTZ MILL, Hantington Centrifugal

AN SEND FOR CATALOGUE TA

CORNISH BOLLS,

HGS and TROMMELS

FRASER & CHALMERS

ENCINES AND BOILERS.

'Sawna

M A CHINERY,

CORNIZH

-bael ni notereqo ni al saltow gnifiems gni This Mill as a Cruehor and Pul-verizer is without rival,

STURTEVANT MILL.

ENCINEZ

PUMPING

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

HALLIDIE'S

HOISTING

LEFFEL'S

MIKE ROPE

TRAMWAYS,

DENABR OFFICE:
No. 248 Bighteenth Street, Denver, Colorado.

MEXICO OFFICE: No. 11 Calle de Juarez, Ohlbuahua, Mexico.

JAMES

UTAH OFFIOK-SALT LAKE OITY, UTAH.

GENERAL OFFICE AND WORES:
Fulton and Union Streets, Chicago, III.

NEW YORK OFFICE: No. 2 Well Street.



1AMES LEFFEL & CO.,

or 110 Liberty St., Mew York.

Springfield, Ohio,

FRASER

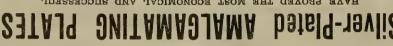
ER & CHALMERS, General Agenta, Chicago, Ill., and Denyer, Col

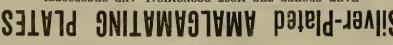
## COLD MINERS

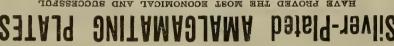
Quartz, Gravel and Placer Mines!

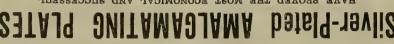
Fifteen Medals Awarded,

HAVE PROVED THE MOST ROUNDMICAL AND SDCCESSFUL







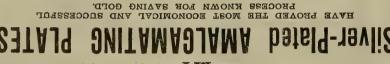


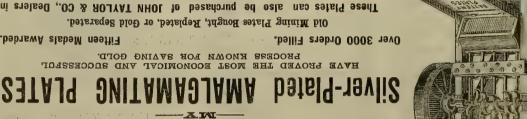












American Exchange Hotel,

## THOMAS PRICE'S ASSAY OFFICE

653 and 655 MISSION ST., SAN FRANCISCO, CAL. San Francisco Gold, Silver & Nickel Plating Works,

Assayers' and Mining Material, 112 to 118 Pine Street.

CHEMICAL LABORATORY,

RULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24. HOURS,

of in the Open Market to the Highest Bidder, Ores Received on Consignment, Sampled, Assayed, and Disposed



San Fran m Bank of (

DAAS, & WM; MONTGOMERY, Prop'ra.

### DIRECTORY, SHAREHOLDERS' WINING

ASSESSMENTS.										
COMPILED BYRRY THURSDAY FROM ADVERTIGAREDTS IN MINING AND SCIENTIFIC PRESS AND OTHER S. F. JODENALS.										

Cr formandana	OI
	on delitoring & year of co Aevada W Havens 509 Montgomety St 107 Mortgomety St 107 Mortgomety St 107 Mortgomety St
TIEL PAYABLE	NAME OF COMPANY, LOCATION, SECRETARY, OFFICE IN S. F. AMOU
	PATEST DIVIDENDS—WITHIN THREE MONTHS.
8I 40O IRI	
	nand 32 Womogynow 325 Morizot M. Co. B. Morigomery 32 M. Co. M. Gerria
71 35O i.e.	meka Con M Co. Nevada G H Willson 306 Fine St Annu
71 300 lsı	xchequer M Co Nevada U E Elhot Wontgomery St Annu
181 Oct 24	ontention Con M Co Arizona. D C Estes 3 Montgomery St Annu
alOct 24	Jpha Con M Co
TING DATE.	NAME OF COMPANY, LOCATION, SECRETARY, OFFICE IN S. F., MEET
	MEETINGS TO BE HELD.
act from Camous and t	
te yremoginom + cc.,	Veldoa M. o o. M. Co., Califora. 3. 20. Sept 20. Oct 25 Nov 15 A Waterman 0. M. Co. 20 M. Co. Califora 3. 25. Sept 2 Oct 10 Oct 29 K B Bunker
406 Montgomery St	
38 vismontaoM 805	microsk Hyd M Co. California. 4. 65.8ept 27Sopt 28Oct M. J Scoville
38 aigrofileO 484	bue Con M Co California. 2. 21 O. 25 Nov 16Dec 10. Berry
38 signothay cos	outh Comercock Con M Co Meyada. 2. 10. Aug 29. Oct 5 Oct 31 M Buffington
350 Pine 3t	COLDION S M. CO 19 CO 10 CO
38 YramogranM eoc.,	87826 M Co Meyada69. 50. Sept 8.00 11 Oct 31E B Holmes
339 Montgomery St.	nanista W. A., Si vol., y dol., C. deb. Sc., S Maretia M. series
38 gramoganoM 90g	Otosi M CoNevada, 28. 50. Aug 22. Sept 30 Oct 20. C E Elliott.
48 giarolifa0 blb	Verman S. M. Co Nevada. 53 25. Aug 27 Scpt 30 Oct 21 G D. Edwards
328 Montgomery St	tayllower Gravel M. Co California38. 25. Sept 27. Nov 1Nov 22 Udviden
38 VismoganoM 868	Iono M Co California, 24., 50., Sept 35., Oot 20., Moy 21., C W Sessions
327 Piue St	ocomotive M Co 21. J Grosser 1. Oct 24. J Grockett
	ave Oak Difft Gravel M Co. Chironia. 6. 10. Jept. 15. Oct 190. Wov D Mird Had over
48 sirrolifa California St	netice M Oo Nevada. 45. 30. Sept 2. Oct 27. H E Kelley
	Now Teaching M Co Of M. Saintonia. 9. 16. Sept 6.0.0 M on Teaching M. O. M
48 oai4 625	On Imperial M Co Mevada. 24. 25. Sept 6. Oct 10 Oct 27. C i McCoy
48 vismontatoM eds.,	hollar M Co
18 one as the state of the second sec	Dhumpion M Co California. 26. 10. Aug 26. Oct 4 Oct 24. T Weizel
48 gramoginoM euc.,	3est & Belcher M Co Nevada. 33. 50. Son Jay 25. Sept 30 Nov 7., 1 Orockete.
48 gramoginoM 60g.	30die Con M Co California 3. 50Aug 12Sept 16 Oct 21G W Sessions
38 Vismogrand eoc.,	Lipha Con M Co Morada. 22. 50. Aug 24. Oct 4 Oct 25. O E Elliott
PLACE OF BUSINES	COMPANY, LOCATION, No. AMT. LEVIED, DELING'NT, SALE, SECRETARY,
PLACE OF PRISINE	
	STNEMSESSA.

Lash	larket.	Metal A	York	Well	
N	gaiwollot adt avig 1		vices dat : :	E prices	TOX WE

ла ат. — 5‡@8фс. ори—Ло. 1, \$22 00. 1, \$22 00. 1, \$26 00€4.70. Покеп. Уве — БЗ@5фс.

Prices generally varient for metals not regularly deally Prices generally varient by Prices generally varient for all set the M. Y. Exchenge, covering extremes of anyone and selecter views. All prompt delivery. Anaugusta and selecter views. All prompt delivery. Anaugusta and selecter views. All prompt delivery. Anaugusta and selecter views. All professional selection of the sel

### San Francisco Metal Market.

ш					
1	-	<b>@</b>	la		Sheet, Yas it, Y to it it, itess the cask
1	6	(G	8		SING—German, Sing Sing See the cask
1	6_		48		Flasks, old Flasks, al
П	_	ெ	90	τ	E.TERRER LIGHT
П	Ξ	<b>9</b>	00	Û	
1	97	100	45		Obarcoal
1	09	100	00	9	Naylor & CoTINPLATE—Coke
н	ÐΕ	(Ø)	ŎΙ	~	Maylor & Co
н	9	(D)	ŧΰ.		Machinery
ı	9	0	Ŧ		Plow
ı	_	@	8		Black Diamond, ordinary sizes
н	25	<b>@</b>	91		STEEL—English, fbBlack Dismond, ordinary sizes
Ł	-	9	20	8	Chilled, do.
l	-	20	00	2	Buok, # bag
ı	_	999	08	I	abot, discount 10% on 500 bag. Drop, #8 bag.
1		_ ®	8		LEAD—Pig. Shot, discount 10% on 500 bag. Drop, # bag.
н	94	9 2	90	ð	Tog
1	9		00	g	Diomes reserved
н		<b>9</b>	20	32	Shotts, No. 1
П	Ξ		20	38	Oregon Pig, ton Olay Lane White
н	00	(d.35 (d.35	03	65	WINGHOUSE SOLE, 1705, 15 COM.
н	00	829	_		Eglincon, ton L. ton L. ton
ł	00		_		[RON-Glengarnock ton
н	12	(a)			Fire Box Sheets
1	139	இ			Fire Box Sheets.
П		(g	6T		Sheuthing
1	12	(ည)	61		Bolt.
П		_	-		
1	Fg	0			Атпакова
1	8	(e)	2		Аитімоит—French Star
1		(D)	16		ANTIMONY-French Star.
1	-7	188	13	ct.	Tauesday, Oc
1					WHOLESALE.

### Mining Share Market.

Prices of mining chares have been somewhat arriable during the week, and a little more strength is exhibited in the share market. In the share market. In made by some of the mines on the Comstock is so very favorable that on the Comstock is so very favorable that on the Comstock is so very favorable. The most of the development of the constock is being year of the development of the constant of

Our Ference court and of our paper and the cour paper and the cour paper and course in the course of the course of c

The following companies have been incorporated, and papers filed in the office of the New Incorporations. List of U, S, Patents for Pacific Coast

Inventors of the proof of the place by any amount of power which it rests, and cannot be removed from the roper of the peofice. When shorted by Dewey & Co., Ploneer Patent Carbon of the supplemental jaw is not needed, it can be supplied to turn the poeket, but there is a small class which the poeket, but there is a manning to the proof of the proof of

The following companies have been incorporated, and papers filed in the office of the Superior Court, Department 10, San Franciscon. Superior Court, Department 10, San Franciscon. Choleck, Dore Vet. Th. Object, to bore for and refine crude petroleum. Capital shock \$10,000. Directors, H. L. Garfield, Henry Raymond, S. L. Loomis, John T. Bred. Stock \$10,000. Directors, R. P. Thomas, H. Brown and Lead Barding, W. H. Brown and Lead Barding, W. H. Brown and Lead Barding, W. H. Brown and Lead Barding and Stock \$100,000. Directors, B. M. Courbertar. Develormer Co., Oct. 7th. Capital Stock \$100,000. Directors, B. M. Mexico. Capital stock \$250,000. Directors, Gaptial stock \$250,000. Directors, H. J. Barding, A. M. W. W. Oodward, Geo. W. Cabital stock \$250,000. Directors, H. J. Barding, Geo. W. Lochie, James Madison, J. T. Mewith and James Eva.

Jewith a stock \$1,000,000. Directors, H. J. Barding and sequiring lands in Masker. Co., Oct. 7th. Object, to deal in real leasts, miles and James Eva.

Jewith a stock \$250,000. Directors, H. J. Barding, Geo. W. Lochie, James Madison, J. T. Barding and sequiring lands in Masker. Capital stock \$250,000. Directors, M. M. Markens, J. Doresto Layn and Papers and Propers of land and Opticular and Stock \$1,000,000. Directors, Capital stock \$1,000,000. Directors, J. Barding and sequiring lands and Stand Bridging bays, buy large tracts of land and operate steamships, wharves, deports, railroads and Walliams and Thomasson, M. J. Markens, John (Capital stock \$1,000,000. Directors and Walliams and Thomasson, M. J. Barding and Stand Stand Stock, Dore.

Each of Willems and Paristh, Geo. M. Perine, M. C. Gapital stock \$5,000.

Bridging bays, buy large tracts of land and stock \$1,000,000. Directors, M. W. Hilliam, Bertrand and Fabital Joestors, Mev. Capital stock \$5,000.

Barding and selectors, Mev. Capital stock \$5,000.

Bracetors, M. W. F. Perine and John L. Beodelle, M. W. R. Townson, M. F. Perine and John Williams and Thomasson, M. J. Perine, M. C. John John J. Beodelle, M. W. R. Seudleis, M

Scott. EAST GRAND PRIZE M. Co., Oct. 8th. Loca-tion, Tracarora, Nev. Capital stock, \$10,000,-000. Directora, N. W. Scudder, A. H. Tru-man, E. F. Reed, A. D. Taylor and Robt, P. Scott.

DOOR. TOOLUMME G. M. Co., Ook. 10th. Object, to work and develop what is known as the Table work and develop what is known as the Table to do a general mining business in Tuolumne and other counties of the State. Capital stock 52,000,000. Directors, J. Kallines, F. W. Utter, L. J. Lewis, Manuel Eyre and O. H. Bozar, L. L. Lewis, Manuel Eyre and O. H. Bozar, L.

pand other connuces of the Series, Capterl stoke 5.00,000. Directore, J. Eallines, F. W. Ut. Seri. L. J. Lewis, Manuel Byre and O. H. Bo. Other Control of the control of t

### Bullion Shipments.

### Don't Fail to Write,

who is a paper be revelved by solution the superciper who come to the superciper who come to the superciper who can be superciped to the superciper who can be superciped to the superciped to t

TOR THE WEEK ENDING OCTOBER 4, 1887.

370.922.—PORTABLE CENTRIFUGAL FOUNTAIN
370.629.—ARCHED BRINGE—P. Britvich, Los
Angeles, Cal.
370.861.—POTATO-MASHER—G. M. Drum, Los
Apparente (191)

370,001,—FOTATO-MASHER—G. M. Drum, Los Alamos, Cal.
371,740.—Washing Machine—Wm. J. Hunt, 371,073.—Cal.
Cal.

Cal. 371.143.—Pipe Wrench—Egbert Judson, S. F. 371.143.—Pipe Wrench—Egbert Judson, S. F. 50.60s.—Strent Tube-Bushing for Property 370.60s.—Strent Tube-Bushing for Property 370.974.—Milk Bollee—C. D. Salfield, S. F. 370.974.—Milk Bollee—C. D. Salfield, S. F. 370.974.—Milk Bollee—C. D. Salfield, S. F. 371.913.—Packing Patabased, S. F. While, Fireson, Cal.

Morsa,—Copies of U. S. and Foreign patents turnslated Morsa,—Copies of U. S. and Foreign patents that posterior order). American and Foreign patents of telegraphic order). American and Foreign patents obtained, and general patent business to tracing Coa it invontors transacted with portion sentiness. The school of the more presented with portion sentiness.

### Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Soientring Press U. S. and Foreign Patent Agency, the following sreporting a provided through Angeles. Wo. 371,140. Dated Oct. 4, 1887. This is one of that cleas of washing machines that of a confidence in which a cylinder containing the coldessis no communication being freely effected between the two firms and comists in the peoplies in constituted the checked to communication being freely effected between communication of devices. The confidence is to provide a machine readily operated, in which the clothes will be subjected to object is to provide a machine readily operated, in which the clothes will be subjected to object is to provide a machine readily operated. In which the clothes will be subjected to object is to provide a machine readily operated. In which the clothes will be subjected to object is to provide a machine readily operated. In which the clothes will be subjected to object is to provide a machine readily operated. In which the complete our outside into a steam throughout their mass, while they are prevented from pack-their mass, while they are prevented from pack-they was a complete and the mass of the pack-their mass.

MILE-BOILER.-Carl D. Salfield, San Fran-

Mike-Boilker.—Carl D. Saffield, San Francisco. No. 370,974. Dated Oct. 4, 1887. This device for boiling milk is designed to prevent the boiling over of the liquid. It consists of a supplemental chamber secured to one side of a supplemental chamber secured to one side of the vessel, which has an opening made near the supplemental chamber. Then flanged cover being also reduced so as to leave free access to the supplemental chamber. When milk is boiled in the vessel it becomes thicker on accessent of the cream rising to the top, and often count of the cream rising to the top, and often addedny rises so as to boil over; but with this mental chamber through the opening in the upper edge of the vessel, and the supplies mental chamber through the opening in the upper edge of the vessel, and the surplus will thus ber deduced and prevented from boiling over upon the stove.

The store of the store of the store of the store.

PACKING PLATES FOR HAISINS.—Truman C. White, Fresno. No. 371,013. Dated Oct. 4, 1857. This device for packing raisine consists of a plate having depressions made in its surties, which plate forms the bottom of the president in a certain position, so that when the raisine in a certain position, so that when the case for shipment those will have when the periminary box will form the top town of the preliminary box will form the top made of any suitable or desirable made of any suitable or desirable made of any suitable or desirable made in any form or the depressions may be made in any form or the depressions may be made in any form or the depressions may be made in any form or ing the same design.

ing the same design.

Hybrathic Euchrie.—Samuel M. Knight, hybrathic Euchrie.—Samuel M. Knight, and Euther Creek. Mo. 371,076. Dated Oct. 4, 1887. This improvement in hydraulic engines consists of a water-cylinder with a plunger moving therein, a pieton-rod consected with the plunger and extending through one end and noving therein, and extending through one end and head, balance-valves by which water is admitted and extended atternately from the opposite and a mechanism by which the valves are schuzted and balanced, and which the valves are schuzted and balanced aupplemental safety exhaust walves, and a supplemental safety exhaust walves, and a supplemental safety exhaust walves, and a supplemental safety ornare when the opicies to one and of the cylinder, and a mechanism by approaches to one and of the cylinder, and a supplemental safety ornare when the pieton approaches to one and of the cylinder, and a supplemental part of the cylinder, and a napproaches to one and of the cylinder, and a status on the state of an attached by a piece with a corragated front, so it can be used one round rods or pipes in the same menner that the one of the cylinder, and the supplemental plate or jaw is smooth on the piece with a corragated front, so it can be used on round rods or pipes in the same menner that the emphasion of the wrench is ordinarily used on angular under jaw of the wrench is ordinarily used on angular under jaw of the wrench is ordinarily used on a postery the inner tace of the one or provided with holding-teeth, orther jaw of the wrench with holding-teeth.

The pressure is such and with holding-teeth.

The pressure is such and with holding-teeth.

The pressure is such and with holding-teeth.

ARIZONA Produced 16,000,000 pounds of copper set Lake Oity for the nine months of 1887 per last year, Persons receiving this contents, terms of subquested to examine its contents, terms of subsoription, and give it their own patronage, and,
yournal, and making its value more widely
yournal, and making its value more widely
to course it faithfully serves. Subscription
tate, \$3 a year. Extra copies mailed for 10
cents, if ordered soon enough. It shready a
subscriber, please show the paper to others.

Complimentary Samples.

### Carrier | 1981 | 1981 | 1982 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 1988 | 19

Sales at San Francisco Stock Exchange.

80.4 04.4 87.4 88.4 04.4 82.4 80.4 81.4 84.

20.4 83.4 04.6 02.8 00.4 00.4 00.4

04. 05. 04. 04. 05. 07. 07. 07.

92.

00.6 82.6 87.8 \$8 08.7 \$8 00.7

05.400.3 84.505.5 80.501.4 05.8 88.5 82.4 03.8 85.5 81.5 09.8 81.5 03.1

1 03.1 02.1 31.1 30.1 08.1 01.

06. 00.1 28. 20.1 221 221 341 471 59.1 68.1 69.1 01.2

WEER WEEK WEEK ENDING ENDING COL. 6.

2. F. Stock Exchange. e of Lowest and Highest Sales in

1,2; 1,20 3,90 3,00 6,00 08. 88. 88. 08. 87. 07.

99

87. 09.

Va. & Cal enton odie Tunnel

saltimore... selle Isle... sodie Con. sest & Belcher



### ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Tramears, Rievators, Signals and all kinds of Electrical Systems for lighting and samission of power, either direct or with storage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO. The only complete and satisfactory invandescent system. Lights require no attention a fine day as made as as the state of the state of

H. T. Scorr, Vice-Pres. and Treas.

Gro. W. Presscorr, President. Irvine M. Scorr, Gen'l Manager.

IBON

Location of Works, Potrero. P. O. Box 2128.

Office, 216 Market St., S. F.

## Pump STEAM, AIR. AND HYDRAULIC MACHINERY.

Agents of the Cameron Steam

HOME INDUSTRY. ALL WORK TESTED AND GUARANTEED.

BARY HOISTS, VENTILATING FANS, SELF-FEEDERS, PULLEYS, Settlers, Ertorts, Ertorts,

VERTICAL ENGINES, ADVIONATIC COTPORT ENGINES, COMPOUND COUDENSING ENGINES, SHARTING,

**UNION IRON WORKS,** TRY OUR MAKE. CHEAPEST AND BEST IN USE,

Successors to PRESCOTT, SCOTT & CO.



### Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

and Salivation.

The most particit appliance for people engaged in Smelting, Dry Orushing, Genaro Works, Quickstlver, Mines, Lend Gorroding, Thresshing, and Stock-driving, and all other occupations in where there is dust, possesses, and all other occupations where there is dust, possesses, and similar where there is dust, possesses, as of the properties and similar whore there is dust in the serial distribution are also do the procession of the process o

Sard for Descriptive Circulars containing Testi-onials of well-known parties who are at present using

CALIFORNIA VIGORIT POWDER CO.,

No. 40 California Street, San Francisco,

## C.DENEMILE" OF "GIANT")

Blasting Powder, Vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager. FOR REMOVING STUMPS AND TREES,

S. B. PRENTISS, Greenville, Oal.

South Comstock Consolidated Silver Min-DELINQUENT NOTICE.

## Placer Mine for Sale.

DANIEL BOLAND, Sec'y Filot Peak M. Co, Cilbsonyllle P. O., Sierra Co, Oal.

Practical Treatise on Hydraulic Mining.

This new and important book is on the use and Trough in the use and Trough in the use and Important book is the cut of the the control of the

### MINERS WANTED.

Good Quartz Miners can find steady employment at e towns of Crescent Mills and Greenville, in Plumas

se are \$2.50 to \$2.75 per day, with prompt pay very month. These towns are easily reached by rom Reno, Oroville or Chico.

BACK FIRES of the MINING AND SORBWING PRESS (Un-ter (wo volumes) & Inserted in Dowey's patent bind-ar (wo volumes) & Inserted in Dowey's patent bind-part (wo volumes)

## The Anti-Debris Movement.

On Monday less the Directors of the Anti-berts Association of the Sortamento valley set and adopted the Gollowing resolution, in-reduced by Edward S. Woodruff, plaintiff in the famous litigation in behalf of the valley in-

Lessessed, These the Presidents of the Anti-Debris Association for the Anti-Debris Association is barely presidents of the Anti-Debris Association in barely requested to extend to Scantonia and Congress and Invitation of Congress and the Association on bother the the Googness and the Association of the House Association of the House and invitation of the House the Googness and the Association of the House th

### Books on Assaying.

BY C. H. AARON,

PART I.-Gold and Silver Ores.-Price \$1

.III дил II етялЧ

Lead, Copper, Tin, Mercury, etc.

This book is entitled "Assaying—Parts II and III," and is separate from Part I, and treats of Gold and Silver Bullion, Lead, Copper, Tin, Mercury, Zinc, Mickel, Cobalt, etc.

:stnetnoD to eldaT:

Owner! Runner! Agent! To Every Pump Maker,

If there is any practical question concerning any appraisance of any adjustment of any endemny's PUMP is not answered in Me, Robert Geimeinn's PUMP (ATECHISM,\* we would like to have it for answer in the max edition or volume.

The Author will answer any such course.

us, II cour paper. "Cakeh" questions invited, for our paper. "Cakeh" questions practical bearing.

Adjust, and run all the leading pumps in the adjust, and run all the leading pumps in the piece. Frice of the book, post-paid, only \$1, and shape and a supplementation can be bad in no other shape and a supplementation of the post-paid, only \$1, and a shape and a supplementation of the post-paid, only \$1, and a shape and a supplementation of the page of the pag



This paper is printed with Ink Menufac-fured by Charles Encu Johnson & Co., 600 South 10th St., Philadelphie. Branch Offi-ces—47 Rose St., New York, and 40 La Salle St., Ohlcago. Agent for the Pacific Cosst— Joseph H. Doreiy, 539 Commercial St., S. F.

### PULVERIZER PNEUMATIC

## POWERFUL OPPOSING CURRENTS

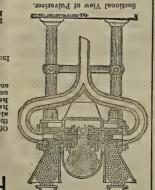
Of dry anper-heated steam, so arranged that they continuously charge themselves with crushed or granulated materials, and by the great force and velocity of the steam currents the animetrials are dashed againsts foad of them with the continuously charges the continuously desired of themselved. The light comperature of the amperature of the amperature of the amperature of the amperature of the steam currents employed, through which every minute particle of the mesty decides a beamfolded which they will planted and ores containing rulety dolld. The light weight and art simplicity of construction of the fulverizar, the extremely small and inexpensive wealth gentle, are the WONDER and SURPHISE of all who witness its operation. The Outpart spropage of unrish complete plants for pulverizing and SURPHISE of all who witness its operation. The Outpart spropage of unrish complete plants for pulverizing and SURPHISE of all who witness its operation. The Outpart spropage of the state of the surface of the su

10 TO 200 TONS PER DAY,

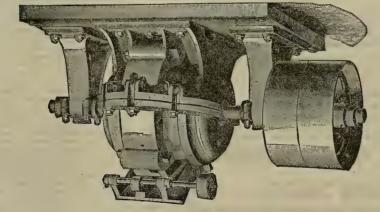
Including a Sectional Steam Boiler supplying all the power required.

## PHEUMATIC PULVERIZER COMPANY,

2 and 4 Stone Street, NEW YORK.



## EFIZEE-LUCOP



## CENTRIFUGAL ROLLER MILL

O, K. OHTON.

WALLIFFER OF GENERAL MACHINERY.
Works, No. 315 Mission St., San Francisco.
Special attention given to Woodworking Machinery.
Steam and Gas Engines. Correspondence solioited. ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of smalgamation may be applied.
At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh
dry, and from 3000 to 6000 pounds Wet.
All wearing parts easily and cheaply replaced. May be seen in operation at the New York:
Metallurgical Works, 104 and 106 Washington St., and Recific Iron Works, San Francisco.
Certificates as to performance of the Mills, and any information required, furnished on Certificates as to performance of the Mills, and any information required, furnished on Certificates as to performance of the Mills, and any information required, furnished on Certificates as to performance of the Mills, and any information required, furnished on Certificates as to performance of the Mills, and any information required.

THE FRISBEE-LUCOP MILL CO.,

HOOKEK & TYMKENCE, Gen'l Agents.

THE GIANT POWDER COMPANY

Office, 145 Broadway, cor. Liberty St.,

The Safest and Strongest High Explosives in the Market.

GIVAL BOWDER OF DYNAMITE

Of Different Strengths as Required.

GETVLINE-DANVUILE' Stronger than Dynamite and even safer in Handling.

NOBEL'S EXPLOSIVE GELATINE," which confeins 94 per cent of Altro-Clyocalne, and

10DSON POWDER IMPROVED:

BANDMANN, NIELSEN & CO.,

GENERAL AGENTS, 9AN FRANCISCO, CAL.

NEM LOEK'



Ot all kinds made to order. Send for Descriptive Cata-logue 17 and 19 Francisco. SAW MILLS AND MACHINERY

Manufacturers of

N. W. SPAULDING

HOZZ E BROMNE'

Address "Business Box A," office of this paper MINING EXPERT AND GEOLOGIST,

Civil and Mining Engineer

W. A. GOODYEAR,

MINING ENGINEERS.

ENKEKA FOUNDR

NOSTMOHT SAMOH

THOMPSON BROTHERS,

first St., between Howard & Folsom, Sts

Golden State Pressure Blowers. Mold-Board AMALGAMATORS, STEVENSON'S PATENT Marufacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

Golden State & Miners Iron Works.

Brodie Rock Crushers, Archanic, School Brode Crushers, Hydraulic, Side Walk and Hand-Power Steam Engines, Flour Mill, and Mining, Saw Mill and Dredging Machines Brodie Rock Crushers.

CALIFORNIA MACHINE WORKS, Steam Engines And MACHINISTS, Substitution of the steam o

Iron and Machine Works.

HLEVATORS:
Manufacturers of B. E. Hornicheson's Petent Authorities of Elevators. All kinds of macing and repaired.

ASTORBES SOLICITED.

No. 307 SANSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

10V 28 1882

Saws.

CIRCULAR

CHISEL BIT

Inserted Tooth

SPAULDINGS

LIFE RENEWER,

Liberty St

New York.

TUBBS & CO.

611 and 613 Front St., San Francisco.

Betabhlabed 1866.

Constantly on brada fill sesortment of Menlla Rope, lass Rope, Tarred Manila Rope, Hay Rope, Whole has, etc., etc.

Exists sizes and lengths made to order on short notice.

Exists sizes and lengths made to BRBB & CO.

San Francisco, Cal

For Flour and Rice Mills, Grain Separators, Revolving and Shot Soveens, Stemp Batteries and all kined of Maring Endering and Milling Machinery, 190n, Steel, Copper, Brasss, Sine and Milling Machinery, 190n, Steel, Copper, Brasss, Sine and Albithochers of the celebrated Slot Cui Invente and Slot Punched Soreens.

Maining Soreens as specialty, from Me. I to 15 (fine), Milling Soreens a specialty, from Me. I to 15 (fine), Milling Soreens as specialty, from Me. I to 15 (fine).

And Transfer of the Milling Milling Soreens Minute.

San Francisco Pinnage. PERFORATED SHEET METAL

BATTERY SCREENS

GREAT REDUCTION!

METTS' KOSSETT & CO"

SOLUTION and WATER TANKS

PRECIPITATING VATS, LEACHING VATS WITH FALSE BOTTOMS.

Mining Vats and Tanks

8 California St., and 21 Fremont St.

PARKE & LACY

INCERSOLL ROCK DRILL CO.

THIRD EDITION NOW READY.

For Catalogues, Estimates, Etc. address:

Section 16x16 feet; Length 36 miles.

NEM LOBK

engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC. and others interested in ENGINEERS, CONTRACTORS,

MINING MEN'

NOTICE TO

SEAT FREE ON APPLICATION

Mechanics Mills

San Francisco Pioneer Screen Works,

221 & 223 First St., San Franciscor.
JOHN W. QUICK, Proprietor.

N'S'KEILH

Keith's Electric Dynamos

MOTORS, LAMPS

Storage Batteries.

Electric Transmission of Power Electric Railways, and Apparatus for the

Office, 40 Nevada Block,

San Francisco Cordage Factory

PORTLAND, OREGON.

SAN FRANCISCO. CAL,

SALT LAKE CITY, UTAH.



Machinery

Mining Machinery, Steam Pumps, Wood and Iron and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS.

NOTJEZA

MAJT A NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL OF AT LEAST 25

The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

PACIFIC IRON WORKS,

MINING WACHINERY,

Chleago: Now York:

WM, H, TAYLOR, President.

HEINE SAFETY

R. S. MOORE, Superintendent,

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

L. R. MEAD, Secretary.

San Francisco, Cal.

SAFETY,

DURABILITY,

ECONOMA'

AND FACILITY OF INSPECTION and REPAIRS.

. 62,000 Ноте Рочет пом іп пае.

Guaranteed More Efficient than any other Boiler made. Boilers can de seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hucter Bros. & Co., California Jute dilils, and other places.

ALECORPRESORS—Gold and Silver, Copper and Load Smolting Works, Roasting Furnaces Mall binds.

ALECORPRESORS—Gold and Silver, Copper and Load Smolting Works, Roasting Furnaces Mall binds of Price in the Color of Prancisco.

BY ATER WATER PIPE a Specialty. Works—Have just completed order for 85 miles of 44-inch inch works works Company, Sar Francisco.

STEAM HOLERS of Price in the Color of Mall of Malling Water Works Company, Sar Francisco.

STEAM HOLERS of Price in the Color of Malling Water Works Company, Sar Francisco.

STEAM HOLERS of Price in the Color of Malling Water Works Company, Sor Works Company, Sar Francisco.

STEAM HOLERS of Price in the Color of Malling Water Works Company, Sor Works Works Company, Sor Works W

BOILDERS

WATER TUBE

**BOILER.** 



F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS. Centrifugal Koller TIJENT

Mining Machinery of Every Description,

Steam Engines and Shingle Machines.

SAN FRANCISCO, CAL.

No. 45 FREMONT STREET,



## MINING

ARCHITECTURAL IRON WORK. Ice and Refrigerating Machines, Shafting, Pulleys, etc.

SEND LOR CHCCLLAR

First Premium Awarded at Mechanics' Fair, 1884.

Tolored Warmtechners of the Sole Liberard Manufacturers of the PERFECT PULL

Medart Patent Wronght Rim Pulley

Work 1881 Fremont Streed, and the read Revela, and the Pentiories of Idaho, Washington

Read Streed, See 1881 Fremont Streed, See Organize, User See 1881 Fremont Streed, See 1881 Fremont Street, S

(\$2\\\2000\) E' O' B' FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

VATER 1600 ARE NOW IN USE. Concentrations are clean from the first working. The wear and teach to make tests at 220 Fremont.

Street, San Francisco.

The Montrara Chemited), Lowdon, October 5, 1885.

Deer Sire: —Having feeted three of your Free Farmers in a competitive trial with other similar machines ("Triumph), we have satisfied ourselves of the superiority of your Varners as evidenced by the fact of our having ordered twenty more of your machines for immediate delivery. Yours truly,

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1831; February 20, 1885; September 18, 1885. Patents applied for. THE MOUTANA COMPANY (Limited).

N. B.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 additional Frues and more stamps have been purchased.

Room 7, No. 109 California Street, SAN FRANCISCO, CAL. ADAMS & CARTER, Agents Frue Vanning Machine Co.,

OF VANNING MACHINE, CONCENTRATOR OBE THE FRUE

DORBLE "ECONOMIC" STAMP MILL

W. W. Corner Main and Howard Sts., San Francisco, NATIONAL IRON WORKS

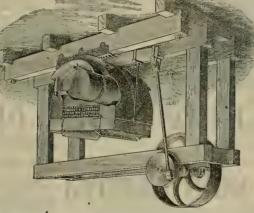
and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES. CASTINGS AND FORGINGS OF EVERTOR

IMPROVED PORTABLE HOISTING ENGINES. ALL WORK TESTED AND GUARANTEED.

KENDALL'S PATENT, AUGUST 24, 1886. GUARTZ MILL. NATIONAL ROCKER

The Patentee and Manulacturers gordially invite miners to critically MARSHUTZ & CANTRELL, Sole Manufacturers.



Expend for Circulars and Price List.

IKON NOLTO-

HINCKLEY, SPIERS & HAYES, Proprietors.

lestablished in 1865.

--- WANUFACTURERS OF-San Francisco

MARSHUTZ & CANTRELL.

other ore crushing machines nos

We challenge competition v Stamps, Ball Pulverizers or

lowing perticulars:

1. The cost is less than one-half of stamps of same especity.

2. The freight to mine is less than one-half of stamps.

3. The freight of stamps.

3. The road of evering is less than one-fourth of stamps.

4. The power for drive its less than one-fourth of stamps.

5. The west is less than one-quarter of stamps.

6. There is no west except on those and dies.

7. In point of stamps and dies.

8. In its stamps on one-quarter of stamps on one-quarter of stamps.

8. In its stamps of competition it is used.

examine and pass judgment upo this improved system of millin and amalgamating ores in the fo lowing particulars:

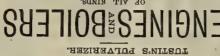
MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or Compound Stern or Side-wheel Engines,

Works, Cages, Ore Buckets, Ore Cars, Fumping Engin and Pumps, Water Buckets, Fump Columns, Air Con pressors, Air Receivers, Air Fipes, MINING MACHINERY,—Holsting Engines and

MILL MACHINERY.—Batteries for Dry or Wes Crushing, Amalgamating Pans, Settiers, Furnacees, Re-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackels, etc.

MISCELLANEOUS MACGINEER.—Flow Mil Machinery, Saw Mil Engines and Boilers, Dredgir Machinery, Powder Mill Machinery, Water Wheels,

**MORKS ORE WET OR DRY.** ratina's Pulverizer



Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries Either for use on Steamboats or for use on Land.

WARRING LOK THE PAULTC COAST FOR THE OF EVER Torangely attended to and at very mo

SUPERIOR TO IRON FOR SOFT and DUCTILE, CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-True to pattern and superior in strength, toughness and durability to Oast or Wrought

Iron in any position or for any service. UP TO 20,000 LBS, WEIGHT,

Cast Steel Castings and Steel Porgings

PACIFIC ROLLING MILL CO.,

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc.

Several Mills are now in the mines doing excellent work. The "Economic" is not only a mill for email mines, but we believe it is destined to SUPERSEDE THE OLD STAMP IN MILLS OF THE LARGEST OAPAGITY.

Goes with each Mill. We also have a suitable

АИ AUTOMATIC ORE FEEDER

We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the rate more than compensated for by the great weight (1200 fbs. each) or minute), which which they run. There are 4800 strokes on the shoes on the dies per minute. Less power is required than in that there are 4800 strokes of the smount of work.

The Mortar has screems at both ends, giving ample discharge. There are no cams or tapped to wear or he adjusted. The stamps adjust themselves as the coes wear.

SE BOWEIN,

34 and 36 FREMONT STREET,

LARGEST CAPACITY,

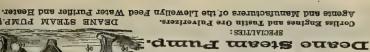
MUTAT

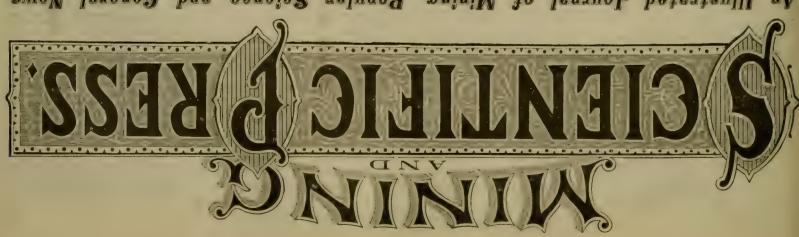
SAN FRANCISCO, CAL

LOCOMOTIVE AND MARINE FORGINGS.

HIGHEST PRICE PAID FOR SCRAP IRON AND STREE, bave prompt attention. Send for Catalogues. Address ALSO Steel Rods, from \$ to 3 inch diameter and Flets from I to 8 inch. Angles, Tees, Channel Steel Rods, from \$ to 5 inch diameter and Flets trom I to 8 inch. Angles, Teels Steel Wagner, Buggy, and Troof Ties, Plous Steel, Machinery and Special Shape Steel I of STEEL KALLES from I2 to 45 pounds per yard. ALSO, Keallroned and Morke Actewal, Murks, Wealle Beams, All Steel Steel Steels Steels Steels Steels Steels Steels Steels Steels Steels Steel Steels St

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.





Namber 17. BA DEMEA & CO. Illustrated Journal of Mining, Popular Science General News. pue

SAN FRANCISCO, SATURDAY, OCTOBER 22, 1887.

Paradise Valley Mine.

TWO HUNDRED AND FIRTY miles down the is reported in excellent condition and the prost-Yukon, on the Stenart river, five men made peots better than ever before. The following one off 123 onnoes the tailings assay about six, bolders during the fiscal year; that the mines of onnoes and blunded fiscal seem in the discount on silver, which should have been paid in dividends to stockholders. The mine the stockholders are reported in excellent condition and the process. pany paid \$40,000 in dividends to the stockemon other matters of interest, that the com-The annual meeting of the Paradise Valley Mining Co. of Mevada was held last week. The report of Superintendent McCurdey shows,

"Paradise mine, production: figures show the ore

tle over three ounces, and that the Rae process is saving all the silver that can be saved. On -til a beyassa agailiat edt ero eonuo 00 no syat. SAVING AMALOAM AND QUICKSILVER.—The superintendent of the Odyssey mill at Dagget, San Bernardine county, has written to Dr. Has that after a run of lour and one-half

metal surfaces, as in Cornish rolls or stamps, baving rings of large diameter. It does the work by direct crushing force between two same by rolls, a trouble which occurs in mills ring (24 inches) prevents the corrugation of the tion is secured, the fineness being controlled by mesh of screen used. The small diameter of running free against ring a perfect pulverizaulation of ove for concentration, and preparing the pulp perfectly for leaching, while with rolls ring enables mill to make the most perfect gran-

of the experience gained in working ores wet and is free from the objection present in the with the orushing system of the old mill, but attrition principle of the great amount of power different machine, designed specially for met crushing, and has new features, particularly adapted to this kind of work. It is the result

THE PRISEEE MILL FOR WET ORUSHING OF ORES.

| liga∮z

winter there, nothing is made by it. There were 250 men on the hars of the 40-mile river \$500 per man, but as it costs about \$400 to exhausted, the 40-mile river mines, 120 miles \$279,893.74; net production, \$215,565.27. As down from the mouth of the Steuart, were found and worked this year, averaging from \$300 to than robbed through Wall-street manipulators

tives at the mines. ing others. They also employ nearly 1600 nawor has 250 Frenchmen at work and are bring-Rosslia, Lower California, The company is composed only of Frenchmen, The company Frenchmen has arrived at Mogales direct from France, en route to the Boles mines at San FRENCH MINERS, -Another large party of

20-dollar pieces for about ten years; but \$1, 000,000 in twenties will be coined this month. THE branch mint in this city has coined no

obligation to buy the mill. months without cost to the owners or without put one of these new mills in a reduction plant on a developed mine in this State for three on a developed mine in this State for three bee is now in San Francisco. He is willing to 145 Broadway, N. Y., and are also built in this city at 461 Howard atreet. Mr. Gideon Frismade by the Frisbee-Lucop Mill Company of directly to pans or to any of the different forms of wet amilian steams of wet amiliantens in use. These mills are required. It finishes its work at one operation, \$2500 each on two bars in 1885. These being \$279,893.74; not production, \$255.25. As and no further sories is sailings is exhausted, the 40-mile river mines, 120 miles from the mouth of the Stenart, were found will be readily seen, we have been worse dissoired. The pull may be run over plates

saim to do the work with one-half the power to a stamp-mill.

The power to limit the contact of rolls with gum boots, \$14 per pair; leather boots, \$20. cents per pound; sugar, 30 to 35 cents per pound; canned pound; canned 100 lbs.; bacon, 40 cents per pound; beans, 20 nia prices prevail for all the essentials, as will be seen from the following: Flour, \$17.50 per UP in the Ynkon region, Alaska, old Califor

> of rolls with ring, and the distance between ring and rolls can be varied at pleasure. Springs are fitted in slots of arms and bear-agrings are fitted in slots of arms and bearas to prevent contact

> > entering mill. The

or steel accidentally

поті ва dons взопата

ot as os gair mort-dus brad reve sasq

are free to recede

bas ellim to gaisso

to ebistuo yleside of

arm at each end, and

betted in a slotted journaled in boxes on shafts, which are

and carried round

surface of ring. The to solis are fitted to

Verize the fock be-

toller, crush and pul-

by their centrifugal force, which is over 6000 fbs. for each

s ai gair do roiretai

are carried round the

and the rolls, which

periphery of which the rock is crushed,

the rock, are only the ring or annular die, on the inner

me in contact with parts, those which

gairsew sti 3adt struction is such

fectly new piece of mechanism. Its con-

ified as to be a per-

so changed and mod

Publishers.

tog of which is given on this page, is an entirely

ing ores dry, and when so running is perfectly estisfactory, but when working ores wet, did not do so well. The Frisbee mill, an engrav-

some months since, is intended mainly for work-

The Frisbee Mill,

The Friebee-Lucop mill, which we illustrated

ertical plane,

onter

tween their

claim to do the work with one-half the power per hour, to 40 mesh, and the manufacturers brite in every way, weighs about 8000 gounds. Sirer a stone of the sto shafts, ring and rolls are of best steel, is well being of such mesh as the fineness of pulp desired may require. The mill is fitted with automatic feed, fast and loose pulleys, the any coarse rock that may come against it, and protects the outer screen from injury, the latter to resh and heavy wire, takes the wear of tor discharge, are two revolving screens at each ond, the inner one nearest the rolls being of side the disks, at such distance as to give room roller shafts pass close the ends of mill, and inbeing reduced. Revolving dieke through which ing against boxes, by which the centrifugal to rook for the rook for t

the assertion that silver and silver certificates are not acceptable to the people. help, as all mining companies should, to belie pay our labor and local bills here in U.S. silver certificates, if they can be obtained, and thus previous history of the mine. In conclusion, he says: I would earnestly suggest that we edt ni emit vas te neat tnesenq te gnige The superintendent thinks he can, with due prudence, assure the stock-holders that the permanent prospects are more encour-

we can handle a much lower grade of ore than by other methods of manipulation,"

demonstrated that by our concentrating process

gal roller-mills continue to give good satisfac-tion, and the latter part of the past year has

in collusion with our national officials out of \$64,328.47, usually termed distinct on allyer. Our Huntington contrinu-

'entea 1eu fec'197

ellver disconnt, \$60,

concentrations; par

280,911 pounds—of

-qqida baabeanborq

net value, \$10,170.

discount, \$4046.13; \$19,221.13; silver

trating, 54 tons, 36

ped without concen-

or tailings during the year. Shipping ore: First-class ore produced and ship-

entrated 1039 tone

31, 1887, 10 tons, 800 tangaA Ilim edt ta pounds, Ore on hand

year, 5032 tons, 1536

edt gairub beggide

tone, 336 pounds. Ore milled and

milling ore on hand at first of year, 741 tons; tons; 5043

tone, 1070 pounds; 54 tons, 36 pounds; milling ore, Wild Goose mine, 405

ore, Paradise mine,

Pounde; shipping

3842

\*spunod

Concentrates:

'enjea

\$261,672.61;

вискв — ј. ed during the year

half of October aggregate about 20,000 tons. Coar shipments from Seattle during the first

.llim-quests a to rasw bas

### A Temple of Mithra,

was established in the countries conquered by them, but fransformed somewhat by borrowing from the indigenous cults many of their chartons cults many of their chartons cults many of their chartons of Constantine passed like a devastating hurricane over all the monuments of idolatry. The came over all the monuments of idolatry. The secretal meters under ground, entirely covered with rubbish, if the traveler over the land with rubbish, if the traveler over the saco with rubbish, if the traveler over the beneath his feet are splendid halls filled with beneath his feet are splendid halls filled with because on the surface of the soil there is nothing to reveal the existence of these mysterious rughles. It would seem that the veves is not the surface of these mysterious rughles. It would seem that the the Persians. His worship, which followed the triumphant armics of the Kings of Persia, was established in the countries conquered by M. Edmond Durighello, who made the diecovery of this temple at Sayda, the ancient Sidon of the Phonicians, says of it in the Bosphore Eupplien: The worship of Mithra is of Persian orline. Mithra is the God Chamard of the Persian energy. Translated for the Parss from the French by M. M. M.]

Adepts of the Worship of Mithra

Adopte of the Worship of Mithre in the city of Sidon, at the appearance of the up the city of Sidon, at the appearance of the will be edict of Constantine, had hastened to wall indeed, they might have been the victims of the policy which was impelling Constantine to the policy which was impelling Constantine to the policy which was impelling Constantine to the severity against the idolaters. The doct is that known until my subterranean researches in the to the intendent of the the topolic conducted me mides of the rubbies of the more the wood, has been destroyed by humidity. It opened hight of a man on both sides of the corridor princes of the corridor confincters are placed, representing several priests, or rather warriors, completely struct, the dome of which is supported by 24 columns to make the conforms of which is a stand to the conform of which is a stand of this corridor of the conforms of which is a stand of the conforms of the conforms of which is a stand of the conforms of the confo

The Signs of the Zodiac;

And in a paces not the Sodiac;

And in spaces not the appropriated upon the wall, are painted some extraordinary figures, which it is impossible to describe here, because of their observed because of their observed in marble and in bronze, veritable holders in marble and in bronze, veritable seales of semirable workmanship. This hall is estable of the midel is a giranic bull paved with mosaics in glass incruated with masterpresses of execution, are posed upon pedestable, the horse plated with gold. Before the midel is a giranic bull in marble, the horse plated with gold. Before the midel is a giranic bull in marble, the horse plated with gold. Before the first special particular and opening the first standard from their tron doors all rasted and desach obleve, their iron doors all rasted and desach obleve, their iron doors all rasted and detable hollowed in the rook and opening into olds. As we proceed, their grandar diminity when we come to old and the server and proceed in which would not comfortably hold a scome to the seventh and last, there is only a space the seneral particular which would not comfortably hold a scome to the seneral proceed in the seneral proceed in the seneral proceed in the seneral proceed in the seneral process and proceed in the seneral process and the seneral process who complies the ensemble. Upon these of different animals. White marble, ivory, and the proceed in the process and, shove all, silver and gold, are embroard in the process of the process of

SEATTLE CARLE HOADS.—The Seattle Cable Road and Water Company will immediately commence the construction of a cable line by commence the construction of a cable line by The cost of the road will be about \$60,000 at the cable road will be about \$60,000 at the cable road to the lake by Mill street and the cable road to the lake by Mill streets and the cable road to the lake by Mill streets and the city with two cable lines, one with a circuit of six miles, and the other with a circuit of six miles, and the other with a circuit of tour miles.

Coarse Gold on the Yukox.—This week we were shown a sample of the Yukoa gold purchased by Koshler & James from one of the Yukoa minets. Evidently the country is no hundug, if nuggets as large as beans are any curiterion. The gold that has been brought out than words of the resources of that unknown section. It is worth from \$16 to \$18 per ounce.

Alaska Free Press.

AERANGEMENTS are being made to rebuild the 60-stant mill burned at Dagget, San Berrardino county, a short fine ago, and owned by the Oro Grande Mining Company. The Daly (Utab) mine product for the first nine morths of this year has been 5.20,236 ounces of fine silver and \$216,162 from one sales. Out of this have been paid seven dividends, aggregating \$300 000 to date, the last, a double one (Nos. 6 and 7), on Sept. 30th.

### The Central Pacific Railroad.

The Result of the Year's Traffic.

of the Central Pacific Railroad Company, for The annual report of the Board of Directors

The samual report of the Board of Directors fibe year ending December, 1886, has been instructed by Central Pacific Railroad Company, for the Central Pacific Railroad Company, for such year ending December, 1886, has been instruction is drawn to the effects of the result of the year's traffic. Particular attention is drawn to the effects of the year's traffic. Particular attention is drawn to the effects of the year's traffic. Particular attention is drawn to the effects of the year's traffic, particular attention in a case and in many port, have been excessively low and in many particular attention in the cessively low and in many particular attention in the cessively low and in many particular attention at the company of the company of the company of the company of the cessively lowevel, the extension of the company of the cessive pass for the cessive pass

### Requerion of Debt.

The report goes on to say that the net floating debt of the company has been reduced during debt of the company has been reduced during the past year \$1,228 \$73 \$5. Its total is now \$1,306,375,71, of which \$522,035,98 represents the amount due the Southern Pacific Company, less amounts due from said company on pany, less amounts due from said company on Op to April 1, 1887, 133 bonds, at a cost of \$139,925,50, have been redeemed.

The net finded debt of the company on December 31, 1886, it was \$49,756,548.53. On December 31, 1886, it was \$49,825,988.04, abouing comber 31, 1886, it was \$49,825,988.04, abouing an increase during the year of \$1,867,409.51.

With deductions from the floating debt this total is reduced to \$638,586,165.

With deductions from the floating debt this total with deductions from the floating debt this total is reduced to \$683,536,166.

The amount in the stuking that in the company is the company on December 31, 1885, was \$5,50,076,17. This that das a total in the time such that of the the time of the the company of the year, as a bown in the proceeds from the company of the year, as a shown in the proceeds of the company of the year, as a shown in the process of the company of the year, as a shown in the fact of the company of the year, as a shown in the year, and year, as a shown in the year, as a shown in the year, as a shown in the year, and year, and

### Mining Frozen Ground.

neath once becomes frozen it remains so, To pave set fire to the mose, which in summer be adones the toto the mose, which in summer be comes as dry as tinder to a depth of several inches, and thus from the heat of the fire, and being uncovered and exposed to the sun and atvessed to the sun and atvessed to the sun and atvessed to the sun and atversed to the sun at sun at the sun at sun at the su obviate this very serious drawback, the miners In speaking of the Yukon river country, the Alaska Free Press says. The ground there is covered to some depth with a thick matting of moss, which is impervious to the ground underand, in consequence, when the ground underand near homes frozen it remains so. To obtain this year serious it remains so. To obtain this year serious a farmaloal.

### A White-Lead Combination,

with each other and with the most important with each other and with the most important white-lead producers of the country with a view white-lead producers of the country with a congenizing a company to sustain the American lead market. This movement has been quietly pushed to a successful issue and the enterprises are now being perfected. It is to be known as the National Lead Truet and among the chief lead market of the Structure of the Company. Its headquarters are St. Louis, Mo., West and South. Among the chief promoters are Thomson & Co., wowers of the St. Louis of the South, Among the chief promoters are Thomson & Co., wowers of the St. Louis Works; the St. Louis and St. A. A. St. Louis and St. Mo., Mest and South, A. Mest and the works; the St. Louis white-lead Raining Works; the St. Louis white-lead manufacturers and the principal standard the works. The present about a standard the standard article, and the standing in the market against the imported article, and the standing in the market against the imported article, and the standing in the market against the remaining the relating the reduction, industrial interests as any later of the same time it will largely increase the view thereby dicate will be to keep up this price, thereby dicate manufacturers of the same and the white-lead manufacturers against the sport of the same time it will largely increase the value and imported article, and manufacturers. The sport industrial institutions each turned in their plants and capital, beside the agreement their plants and capital, beside the series of the best market in the large was a supple disanced of through its agencies. with each other and with the most important white-lead producers of the country with a view says: The announcement is made here that for some months past several of the leading smelting firms of the West have been negotiating A dispatch from Santa Fe, New Mexico,

Nor Mineral Land.—The Secretary of the literior has affining the safe of the decision of Commissioner Sparks in the case of the Magalia Gold Mining Company ver. A. J. Ferqueson, on aspecal which the case of the Magalia Gold Mining Company trom the decision holding that the proof fails to show that the northwest duarter of Section 24, Township 23 north, Range 3, second meridian, is mineral in its charge 3, second meridian, is mineral in its charge 3, second meridian, is mineral in its bomestead entry on said tract, and in Septem ber, 1883, the company filed affidavits in the local sheet of the tract in early safe and officer as to determine the chere the local land different and the statem of the local shed officer as full examine the character of the local shed officers of determine the character of the local shed officers as the safe of severamine the character of the local shed officers as full examine the character of the local shed officers as full examines the character of the secretary, after a similar result, and the Secretary, after a similar result, and the Secretary, after a similar result, and the case, affirmed the decision.

height schedule prepared by the Atlantic & Freight schedule prepared by the Atlantic & Feight schedule prepared by the Atlantic for the month of September shows an increase of over 2,000,000 pounds over those of Allones of over 2,000,000 california terminals for the month amounted to 7,819,955 pounds, the principal items of which were as follows: Wine, 1,400,680 pounds; were as follows: Wine, 1,200,680 pounds; some pread, 734,990 pounds; salmon, 620, pread, pread, 734,990 pounds; salmon, 620, pounds; vegetables, 465,595 pounds; sugar, 784,990 pounds; sugar, 784,990 pounds; sugar, 784,990 pounds; sugar, 784,990 pounds; sugar, 784,900 pounds; sugar, 784,990 po

The Hydrometallurgy of Copper.

At the Usah and Montana meeting of the American Institute of Mining Engineers, T. Sterry Haut of Montreal, Canada, read the fol-

Nowing paper:

In a paper presented to the Institute in 1881, and along paper.

In a paper presented to some length the question of the the discussed at some length the question of the the control of copper," and smore the "Hydrometallurgy of Oopper," and smore the "Hydrometallurgy of Oopper," and smore the these, the recipied the ordered by Mr. James Jouglas and myself, for the second on copper from the oxide of copper, and the second on the employment for its solution of the second on the employment for its solution of the second on the employment for its solution of the second on the employment of copper to the second on the employment of the second on the order of the second on the second of the copper control only the second of t

### In this Process

The dissolved iron is separated as hydrous ferric ordooxide refatining a semily proton of ferric offlor oxide refatining a small portion of ferric offlor oxide. To prevent the loss of chlorine thereby, the use of sulphurous acid to reduce and disport of the comproducts of the

### In the Second Method

Referred to above, beginning with a neutral functions by metallic iron.

In the Scoond Method
acuprous conpers alphate, there is added so a boyer alphate, there is added so a will serve to copyer present the copyer present into the copyer function of copyer suppared by the copyer present into the copyer function of the copyer function of the copyer into the copyer function of copyer fun

### А Меж Ргосеяя.

A New Process.

By attacking the oxidized copper ores with a solution of common salt and ferrons chloride, the latter is decomposed, and the reaulting clear and neutral solution, separated from ferric oxide, but constaining cupric and cuprous colition, separated from ferric oxide, but constaining cupric and cuprous colition, separated from ferric oxides, but constaining cupric and cuprous colition are suid. From such a soid cuprous colution, separated by metallic aron, care but a seculation of the discolved copper after which the whole or nearly the world a readily and completely separated by metallic iron, care being reschifted by metallic iron, care being precipitated by metallic iron, care being resent to a considerable precipitated by metallic iron, and the soid per soid from a cold begins to attack the process before the free soid begins to attack as these bortion of oxidized copper ore, which fart neutral soid. This solution is used to attack a freed portion of oxidicite, the chric oxide from the ferrous choing or the composes and the composes and the composes and the control of the colution of the copper salts for the confidence of the copper salts from soid, and the copper salts from cobtained is then expanded is the soid, and the scid, The sained is then segain treated with sulphurous acid, and the steps, as above described, are retered.

Тре " Заgeргией State."

land oan be irrigated by these streams when they capabilities of this water oan be greatly income to be utilized of or that you purpose, they come to be utilized of or that you purpose, creased. In the home markets oats deed by the coltivators of the markets being close at head, while the prices will each they come and the coltivators of the markets being close at head, while the prices realized are apt to be good.

The gold and silver mines, of which there are an infinite number scattered over the State, are an infinite number scattered over the State, are also will undergo steady increment for some years to ome. In the Eureke alsies of Mereds, will undergo steady increment for some years to ome. In the Eureke alstinct large quantities of which per scattered over the State, Considerable values in self, soda and borax are also siderable values in self, soda and borax are also siderable values in self, soda and borax are also siderable values in self, soda and borax are also siderable values in the confloring of the self of Nevedy to cope and supply the self only country and the self of the sel egraf a os seosiq yaam ni bas eretwyleve e not altogether a misnomer. She has more acres of segeland with more sage to the acre than any other country we wot of. The brush 

girows everywhere and in many places to a large girows everywhere and in many places to a large dwart stee. So common is the shrub that some have thought the wild artemists about bave been incorporated into Mevade's cost of arms. If, however, he had so are not as the to be seed as the counts of the Mevada State Fair, now being held at Meno, are not as they come to us greatly exaggerated, it will be found that such general acceptance of the wild aspectable as the emblan of sterility involves some misses the emblan of sterility involves some misses. The products of the soil displayed at the scholutural resonroes. There are on exhibition there horses and neat catele, hardly insterior to any to be seen elsewhere, which truits, insterior to any to be seen elsewhere, with truits, need not be asbamed, these being all raised in Recand.

Been were the series and the series of the s

they have not been used here for purely oxilayor by mechanical engineers, but not beyon with
layor by mechanical engineers, but not by mechanical engineers, but not by mechanical engineers, but metallurgists.

A revolving horizontal hearth, with dome rool and fixed rabbies, has been used at the Revers of the control of the state of the control of the capacity of treating ore high low arches. There are none as yet with a discussion hearth. They offer the advantages the low arches of the capacity of treating ore high lows arches of the capacity of treating ore high lows arches of the capacity of treating ore high lows arches of the capacity of treating ore high extended the state of the state of the state of the control of the capacity of treating ore high or state of the state of of the state of the

Too Fine for the Pile-Rossting,

Too Fine for the syle-rosesting,

Too Fine for the streed in everther.

Too The for the streed in the object in reverber.

Yorking them raw in the blast furnace, while possible, where oxidized ores abound, and while possible, where oxidized ores abound, and while carried on to a large degree here, is yet not extend the continuous of inon matte. This matte, commended in the same as the notive of the continuous of the contin

(To be Continued)

OPTERIORT DECISION.—Judge Levy has rended a decision of interest to all advisors the playwriters whose works may be infringed upon. A suit was brought by William and Lizbe Vectorus zgainet as a copybric or a play on the copybric or a play on which they hold a copybric or a play on which they hold a copybride an ingubation was asked for, he having but yet a play on which they have a complaint, budge Levy states that Section III of the Revious in substaining a demurer to the complaint, vised Statutes of the United States exclusive the Rector of the Complaint, bion in all suffer at law and in equity under the patent and copyright laws of the United States or sull ander the patent and copyright laws of the United States.

It is said that irrespective of the copyright the patent and copyright the patent and copyright the patent and copyright the patent and one was relating the production upon which a stranger cannot treepast. Sufficient for an infraction of copyright and not for an infraction of hainfiff sues on the form an infraction of hainfiff area on the form an infraction of hainfiff and not for an infraction of a copyright and not for an infraction of a sufficient of her and suction was dismissed.

The action was dismissed, a many places about the copy of the patent and not be a copy or an analyse of the patent and not are also and the common-law rights.

SETLING GROUND.—In many places about town, says the Virginia Report, the surface has sunk two or three feet, and often as much as tan feet. In front of the Fourth Ward school the feet in the ground has sunk two and three feet in the ground has sunk about the old bullion well, on Bowers' grade, has sunk about the feet, and near the Sharon shaft, on A street, they have on the surface to make it level. This is caused by the caved workings it level. This is caused by the caved workings of years past, and the ground above these drifts has been settling and finally causing these cavities on the surface.

Heavy Travel.—The traffic on the line between Santa Barbara and Los Angeles has increased lately to so great an extent that the
company is now figuring on doubling the service. Should this be done there will be two
trains per day between Los Angeles and Santa
farbara interead of only one as as ty peacent. The
local braffic on the Southern Pacific line south
of Los Angeles has grown tremendously lately,
and the evening train is now accompanied as
far as Mojeve by a chair car, which returns
far as Mojeve by a chair car, which returns
with the morning train. It is invariably full of
passengers.

WHILE boring for artesian water at Raton, N. M., a flow of natural gas has been struck. It ignited freely and is sufficient in volume to inspire a local company to undertake its development more fully. Eaton is near the great cont measures of New Mexico, which extend southwest across Santa Fe county. ELECTRIC LIGHT IN MINES—Sixteen are electric lights have been placed in the Carbon hill cost mines, southeast of Tacoma. These mines belong to the California Improvement Co. of the Central Pacific system. The parties putting in the lights go to Alsaks in a few days to light up the Treadwell mines in the days to light up the Treadwell mines in the sense small server.

The Hoffman Furnace,

Which is a Bruckner cylinder with a fire-box at both ends, has had no application in Utah. Unless the furnace be longer than would be preciseable for other reasons, there is no apperent advantage from the fire at both ends. Escapt advantage from the fire at both ends. Escapt advantage from the fire at both ends.

Unting the closing months of Mr. Bruckner's life, he studied and patented different combinations of two cylinders for the perfect utilization of heat. He proposed also a slagging hearth, which would remove one great objection to the cylinder principle, by matting the charge, but he action to principle, by matting the charge, but he as careful study of such combinations, fired from one fire-box, I would reject them as too costly; frouble in one fureace would of necessity stop both, which would mean too much field plant,

Regarding Lead and Silver Losses,

It what I have to say about the past and present status of custing Rid of Sulphur. Present status of custing tubburets in Utsh affords any useful hints toward the more economic solution of the problem, the purpose of momic solution of the problem, the purpose of multipled.

In 1876 Mr. A. W. Geist put up and used a set Sandy. It had a five-box mounted upon the standing of matted material and short senal treek, to duide control of alra-admission. This prepared apove its level, for utilizing waster bear and allowed able five-box and the status of matted into a restrict the pertail prepared charge was raked into an inclined ohuse which conveyed it into the cylinder benefit was raked into an inclined ohuse which conveyed it into the cylinder benefit with the status of the cylinder benefit with the first of the moveral status of the cylinder benefit with the first of the cylinder the works were abandoned, and was find it did after the works were abandoned, and was find the more all the status of the cylinder property of the cylinder property of the cylinder property of the status of the cylinder property of the status of the status of the cylinder property of the cylinder the works were abandoned, and was finally purchased by the French Company for experiments of the cylinder property of the cylinder prop

before the American Institute of Mining Engineers.]
It cannot be said that the development of processes for reacting in Utsh has been evolutionary. Some of the essistence were controlled to the controlled of the controlled of the controlled of the exclusion of all others, at one works. This is certainly not because we have not bed suplur, in place, to contend with, but rather because we have not bed suplur, in place, and out of place, to contend with, but rather because we have not best of contend with, but rather because place, to contend with, but rather because we have not bear of best and out of some of the marking in America, a good share of oxidized ores. But everywhere suplements of each, is stimulating inquiry about the influent system of

[Read by Richann H. Traniums, of Salt Lake City, Utah, before the American Institute of Minlug Engineers.]

Ore and Matte-Koasting in Utan.

Getting Rid of Sulphur.

Bruckner Furnace was Put in

The company is somewhat reticent. In orea carrying 20 per cent of lead, which they have carrying 20 per cent of lead, which they have successfully treated, they admit large lead moderate. They claim the plant is too new to moderate. They claim the plant is too new to have found out just what it can do. Taken in increasing addition to the inpon the management for their oreal metallurgy of the Territory and reflects credit moth in the management for their liberal investment. By the Germania Company in 1886. It is a wounderful to the december by the Germania Company in 1886. It is a wounderful to the Germania Company in 1886. It is a wounderful to the Germania 15 feet long, with a maximum diameter of 17 feet. It has a 4-inoh lining to common brick, shaped in molding to the output that the diverse of the ordy shaped in molding to the output that the diverse of the ordy shaped of the ordy shaped of courselver of the ordy shaped of the ordy ordy shaped of the ordy ordy shaped of the ordy shaped of the ordy ordy shaped of the ordy shaped of the ordy ordy shaped of the ordy ordy shaped of the ordy shaped of the ordy ordy shaped or shaped of the ordy ordy shaped or shaped or the ordy shaped ordy shape

Finally with which seems of waster, some of them of Santa Cinz, have been formed to prove for petron by a the strictly with which waster can be obtained to service and the waster on the obtained the waster, some of them out on the service waster, some of the waster, Two companies, one in Salinas and one in Santa Cruz, have been formed to hore for petro-leum in upper Cholame valley, Monterey county.

New piscer-diggings have been found on the tributaries of Kaniscu lake, in Northern Idaho. The streams have pienty of tail as well as gleary of water. The ground pays from the grass roots down. The ground is about eight feet deep, and on the bedrock it prospects at the rate of 60 cents to the pan. The gold is the rate of 60 cents to the pan. The gold is quartz veins have also been discovered.

Park City, Otah, O.c. 10, 1837.

Mark City, Otah, O.c. 10, 1837.

What Locomorner Whistle is a signal for approachlong blast of the whistle is a signal for approaching stations, railroad crossings, and inceinons,

the brakes—stop. Two long blasts of the whistle

are asignal to throw off the brakes. Two short

blasts of the whistle are an answer to the
conconfidence of the whistle are a canwer to the

that the train has parted. Three short blasts

that the train has parted. Three short blasts

that the train has parted. Three short blasts

cignal that the train will back. Three short

blasts of the whistle when the train is standing are a

signal that the train will back. Three short

to the signals to be given by passenger trains,

to the signals to be given by passenger trains,

to the signals to be given by passenger trains,

to the signals to be fixed blasts of the whistle

to a signal from the switchmen, watchmen and

tor signals from the switchmen, watchmen and

or signals from the switchmen, watchmen and

tor signals from the switchmen, watchmen and

or signals from the switchmen, watchmen and

whistle are a signal to the hases of the

watchmen and brotect the rear of the whistle

persons or cattle on the track, and calls the at
serial switch and signals and the switch as an alarm for

persons or cattle on the track, and calls the at
tender of the switch and the switch and calls the at-

population of about 5000. The Ontario Commune. They was a sensibly at their mill and mine. They was a 40-steam mill deay and night and are taking out good ore. The Daly Company are employing a large force of men, and their mine looks well. Their mill (the Marsac, in the center of town, with its 30 stamps in the center of town, with its 30 stamps of strangers entering the town. The Crescent mine is now miles from Park City. They send their ore down one a narrow mines are looking well. The Ontario mine and the Marsac and to their mills are lighted with the Marsac and Onfario mills are lighted with candescent lights at their miles and a companies service in the diffusion of the mills are lighted with candescent lights at their mines and on the diffusion of the mills are lighted with the candescent lights at their mines and on the diffusion of the mills are lighted with candescent in the their mines and on the diffusion of the mills are lighted with the mills are lighted with the mills are mills are lighted with the mills are mills are lighted with the mills are mills

population of about 5000. The Ontario Com-City, the terminus of the line. The town has a by a broad gauge running from Echo to Park and connected with the Union Pacific railroad Editors Press:—Park City, one of the best mining camps in Utah, is 70 miles from Ogden,

Park City Notes.

Reading the Signs of the Times.

adjacent, trusting in his theory, are said to be has he succeeded in this effort that many business men and miners in Colorado and countries Cycle being one decade in duration; and so well good and bad times come about in cycles, each lo aborreq eacht tant evorq or atquests ed ai in mining matters occur every 10 years. This Benner has, it seems, published a book, whereyivitos Isnaunn to snease seat velivity they are pleased to consider a well-established Oertain of our contemporaries in the mining regions are predicting the occurrence of a great mining boom in the early future, this opinion being founded in part on the prognostications of one Benner, an Ohio farmer, who has been prophesying to that effect, and in part on what prophesying to that effect, as and in part on what they are pleased to consider a wall-satablished

great Cometock bonanza was discovered; 1879 was the Leadville boom, If history repeats itboom; 1869 was the Nevada boom, when the booms of the century had occurred just 10 years apart: 1849 saw the California discoveries; 1859 was the Pike's Peak or Colorado we pointed out the fact that the great mining ew porter of the above doctrine, in justifying its position, remarks as follows: "The other day shaping their affairs accordingly.

The Industry, a Colorado paper and a sup-

Commenting on the above, it may be remarked that in its obromology the Industry is a little at fault. The Sutter-Marshall gold discontinuity. self, then 1889 will see another great mining ex-

interest throughout the country at large. commotion, this latter was restricted in its in-fluence, having but little affected the mining did, at the time of its occurrence, cause a great called bonanza deposit is meant, that took place in 1875; and while each of these events the other hand, the development of the soluded to, the finding of the Comstock lode is meant, that event took place in 1859. If, on It, by the Comstock discovery here alcovery in California happened in 1848-not

gration to Pike's Peak, all of which notable covery of the Cometock lode and the rich placer finds of Idaho and Montana and the vast emioraze in 1868, the latter having been followed by the Leadville furor in 1879. But then, be-tween 1855 and 1865, there occurred the dishegira took place in 1858, and the White Pine the most notable and important events of this kind have really transpired at intervals of ten years or thereabouts. Thus, gold was discov-ored in California in 1848; the Fraser-river hearing the contraction of the contrac it is a little singular, to be sure, that some of times past occurred in a single decade, though chread mining excitement is to be understood it is en are in see have in it may be observed that the area in a factorial in the contract of th If, by a boom, a mere local or even a wide-

a complete success. Gold Bluff, Gold Lake, Kern river, White Pine, Snake river and Panamint proved all fiascos of the worst kind; movements, it is seen that fully three-fourths of them resulted in total failure, not even so much as one-fourth having been attended with counting some of the more memorable of these scramble, and resulting usually in serious dis-appointment and loss. Looking back and reeach attended with the inevitable skurry and coast, has consisted of a series of excitements, glaring exceptions. The truth is, the business of mining, as heretofore conducted on this a little shaky which tolerates so many and such impressed with the idea that the rule must be count as against the soundness of this decade theory. This admitted, one cannot help being nature, and, being so anomalous, are not to currences happened out of the regular order of Of course, it may be claimed that these octhat period. gainth alavastai ralugenti ta beriquart atas

well dispel their charms as being wholly illusory; gible than this decade doctrine, they may as If the hope of our contemporaries for an early an interesting more tanoften Without any sufficient or plausible reason. greater frequency, happening at all, and at even the most unexpected times, and just as ninime seat, these of 10 years, these mining booms and etampedes have been of much pectation. So far from being restricted in their recursagebruah country, has fallen far short of early the Comstock discovery and its subordinates, such as the Esmeralds, Reese river, Silver Mountain and numerous other finds in the

nor can it be denied that the outcome of even

The Cheapest Yet.

California quartz mining. And this has just been accomplished—not with a small test run fine point, and augura well for the future of ton, it is getting the busines down to a very When gold ore can be mined in California for 37½ cents a ton, and milled for 23 cents per The Lowest Record in Working Gold Ores.

of 20 or 30 tons of ore, but with nearly 3000

them to know that ore of that value is paying It will astonieh many persons to learn that ore worth only \$1.16 per ton can be moved and worked without loss, and still more surprise

certain portions to monthly profits go. The under oath, to the different creditors, to whom now the lessee must make a monthly statement, county. The mine is being worked under lesse by [F. W. Bradley. It has been in difficulty, and about 56 cents per ton profit.

This record was made last month at the Spanish mine, Washington Township, Nevada

lowing figures:

Run-22 days' work produced 2796 tons of .eniM

to pro:	1 9040 1	boombox	June 90 days, mad
		.111	in.
.o£78	2 T-T0¢	35 4-10¢	Cost per ton
\$1050£	£7.8£1\$	11.8068.	TotalaTotala
79'19 04'98T	07.0I 8.80	126.00	Delivering ore to mill
\$572.32	87.88 \$	68.88£\$.	Extracting ore
Total.	seilqqu2	Labor.	Cost of Production.
			ore.

64.83282,			ced	ubove noillus	41.
230,	TO 1-TOC	.501-8 21	<b>a</b> c	Cost per t	1
\$644.74	\$301.66	81.848,18		alatoT	1
89.19	3.30	82,83		seneral exper	
162.20	1,52,20 2,96	121.50		water for pow sandling ore.	T.
\$306,55	6143.10	34.E81\$		dill expenses.	
Total.	.meilqqu8	Labor.	-noid	ost of Beduc	
					Ή.
to sao:	3 9643 1	reduced	days' work	Run-20	

The deposit is large and the ore is quartz and ing done. It is quarried out of the side of a bill and run by means of cars to the milla, easily worked. There is no hoisting or pump themselves. The deposit of ore is large and sllim edt ni bevas si blog edt to tsom dynodt passes over silver-plated amalgamating plates, one four feet wide. After crushing, the pulp Huntington mills, three of them five feet and 56 cents per ton, or about 48 per cent of the total transfer of four total and the feet and yields a little over \$1.16 per ton. The profit is Profit. \$1572.91 These figures speak for themselves. The ore

This record is one that will attract great atpay for water-power for their milla. record could be made. The company have to slate mixed, the vein being about 100 feet wide. No concentrating is carried on. The facilities for mining are exceptionally good, or no such

record at the Spanish mine last month is shead or elsewhere. the cost of milling ores in California, but the greatly encourage many owners of low-grade properties. We have been gradually reducing sults of which are startling. The fact that this work was done for any such figures must work. In 20 days' work they crushed 2796 tons, a mill run of some magnitude, and the relaurels if the roller mills continue to do such and the advocates of stamps must look to their Hantington mills have shown great capacity, advanced. It will be noticed that these class of ore the milling need not be much er, owing to circumstances, but with the same other cases the expense of mining will be greatyield more than this mine does per ton. In Iliw tant etat2 sint in banorg to seres to sbass tention among mining men. There are thou-

pulled down and the site used for a waste dump. '' To what base uses do we come at last !" of miners and employes have received excellent wages for a number of years. Now the mill is ers were made enormously rich, and thousands O'Brien each nearly as much; hundreds of othcommerce so many dollars as this one has. From beneath its stamps Mackay picked up, it is said, \$50,000,000, and Fair, Flood and in the world that has turned into the coffers of Perhaps there is not another mill elsewnere. the mill having been torn down and removed be used henceforth as a dump for waste rock, says the site of the old Con. Virginia mill is to THE CON, VIRGINIA MILL, -The Reno Gazette



DEMEY & CO., Pablishers.

Office, 220 Market St., N. E. cor. Front St., S. F.

M. B. EWER.....SENIOR EDITOR.

Terms of Subscription.

Annual Subscription, \$3. New subscriptions will be declined without cash in advance. All arrearages must be paid to tat the rate of \$2.50 per annum.

Advertising Rates.

Per Line (agate) — 1 week a fanom 1. Second 2. Second 2.

Lowdon Acent—Alperd E. Ann, 63 and 64 New Broad

Entered at S. F. Post Office as second-class mail matter Address all literary and business correspondence from this paper in the name of the firm.

PEMEY W. B. EWER. GOLGITORS.
A. T. DEWEY & CO., PATENT SOLICITORS.
A. T. DEWEY & C. B. STRONG.

Saturday Morning, Oct. 22, 1887. SAN FRANCISCO:

TABLE OF CONTENTS,

ILLUSTRATIOUS.—The Frishes Mill for Wet Crushing of Ores, SST, Air Hoist at Isebella Fur-

nece, SGI, Toron Frisbee Mill: Paradise Valley Mines, SG7, The Cheepset Vet; Reading the Signs of the Times; Alaeka as a fulning Region, SGO. Expenditures on Placet Claims; Working Lead Ore in Newads, An Electric Fumping Plant; Work of an Air-Holes, GJ.

Hoise, on Placer Cleims; Working, Lead Ore in Weberg, An Electric Pumping Plant, Work of an Air MISOELLLAUEOUS.—The Hydrometallurgy of University of Plant, 61.

MISOELLLAUEOUS.—The Hydrometallurgy of Misor, 61.

MISOELLLAUEOUS.—The Hydrometallurgy of Misor, 61.

MISOELLLAUEOUS.—The Hydrometallurgy of Misor, 61.

MISOELLLAUEOUS.—The Mish of Misor, 61.

MISOELLLAUEOUS.—The Mish of Misor, 61.

Misora of Misor of Misor, 61.

Misora of Misora of Misora of Misor, 61.

Misora of Misora of Misora, 61.

Misora of Misora of Misora of Misor, 61.

Misora of Misora o

wwes nettest, along Among Chaildren of Professional
Mar, Women as Doctors, SGS.
MINING SUMMAR Throns, Coloredo, Alcond, California, Nevada, Arkona, Coloredo, Idaho, Morstar, Waxifoo, Orecon, Usa, Wyoming, SG4-GB.
MINING STOCK MARKET.—Sales at the San
Francisco Stock Board, Notices of Mectings, AssessaMarket Coloredo, Market Coloredo, Alloredo, Son
Francisco Stock Board, Notices of Mectings, Assessaments, Dividends, and Bullion Shipments, SGS.

Business Announcements.

Ores and Mining—Horace D. Ranlett.

Passing Events.

country is a hard one to mine in, and to prosto the richness of the bars in gold, say that the The miners who returned this week from the Yukon diggings, Alaska, while agreeing as

In another column we give as account of Nevertheless a good many miners will return drawback, and even when they can work, the myriads of mosquitoes make life a burden. peet in. The shortness of the season is a great

tities of ground that will pay when work can now done opens up many possibilities in the future of California, where there are vast quanwe do not believe the record has ever been beaten elsewhere. The certainty that this is is getting things down to a very low basis, and where they are working gold ore to a profit in this State that only yields \$1.16 per ton. This has sized und many or and the sized and the sized many that we work the sized many to the sized many that we work the sized many that we would not the sized many that we would not size the size the size that we would not size the size that we would not size

regretted, destroying as it has one of the large foundries of San Francisco. It will be but a few weeks, however, before the enterprising owners will be ready to go on with work again. this city on Wednesday night is greatly to be The disastrous fire at the Tulton foundry in be done at such low cost.

same manner, edt ni tagues esw sbance Il gaidgiew redtons warming with carp. On Tuesday last one weighing 13 pounds was speared with a pitch-fork on one of the rimes of the creek, while SONOMA CREEK, near Vollmar's hotel, is

nor is the hypothesis less chimerical in its ap. Consolidated Co., died in this city this week, JOHN CAMPELL, the well-known mining man, and one of the directors of the Benton of Soiences, Dr. George Hewston read a paper on "Protozoa, or Lower Orders of Animal Life,"

Ar the last meeting of the California Academy

ample supply. As a quartz-mining country, the resources of Alaska are certainly consider-

with plant, as wood and water are generally in

Although the winters are long and severe, this will not much interfere with quartz opera-

but little prospecting has yet been done there.

dantly shown, though, comparatively speaking,

mainly depend. That some portions of the

seek these distant and forbidding regions as a field of labor, unless it be in search of quartz deposits, upon which, it seems probable, the mining industry of Alsaka will have to

water being frozen solid to bedrock. These are not inviting conditions for the old California miner, few of watom we opine will be likely to

to work, the ground a few feet back from the

barren, are for the most part small and difficult

which are rich and some of which are entirely

some of its tributaries. These bars, none of

occurs in bare slong the main river and

than \$300 or \$400 for the season; or, to use the language of these men, they run from \$200 to \$500. The gold, which is scaly and rather

erom egarevs ton ob erenim edt to sgninrae

be depended upon, and, according to which, the

who have lately returned from that region can

large—that is, if the accounts given by those

hardibood to try.

While getting to these mines is no mere
pastime, the wages made there are by no means

latitude, an alternative which few have the

dgid tedt ai gaitearedid stymetts reaim edt

upon. Yet this, between going and coming, implies a year spent about the business unless

runs at the rate of five miles per hour.

If in that region the miner gets in 90 days of actual work, it is as much as he can count

magine when told that the current of this river

posure such passage involves, one can readily

a large, swift-running stream, up which he has to pull his boat fall 500 miles before reaching the first diggings. What of time, labor and ex-

miles, which brings the voyager to the Yukon,

sea level. These mountains crossed, a series of lakes has to be navigated for another hundred

hundred pounds for packing goods over the range, which has an altitude of 3500 feet above

mountains, where a long and coatly portage has

a hundred miles the miner reaches the Chillcoat

the journey thence on being rough, tollsome, and not altogether free from danger. It is also very expensive. After navigating an inlet for

But Sitks resched, the real hardships begin,

from San Francisco or other more northerly port to Sitka, a trip made in a few days and atsmall

that region we have first the passage by steamer

these, so far as discoveries have gone, appear to be either rich or extensive. In proceeding to

to much are found on the upper Yukon; nor do

mining. The only placers that seem to amount ness of the working season, constituting the great impediments to success in this branch of

after they are reached, coupled with the short-

coast, the cost of getting to them and of living

Alaska is not so very encouraging, the long distance these mines are located from the sea-

From all we have been able to learn, the ont-look for placer mining in the Territory of

Alaska as a Mining Region.

inutility of hasty generalizations on matters of

denominated good and bad times. Hence the

exhaustion of those already discovered; the enachment of impolitic laws, and innumerable other incidents and events, are among the agen-ofes that work those changes in human affairs

speculation in stocks or staple commodities; the discovery of important mineral deposits or the

ure over a wide extent of country; inordinate

rence of a severe drouth or an excess of moist-

of prosperity or depression are dependent on events that do not work in cycles. The occur-

rod and other mineral indicators rest. Sessons plication to other lines of business that as as is to mining. It is on such insufficient data as those that the supposed virtues of the data before the and other mineral insufficients.

so once the mines are opened and equipped

sble and may be very great.

this power must be conveyed six miles distant

in an electric plant for pumping in the Para-dies Valley mine, Wild Ross district, Nevada.

An Electric Pumping Plant,

ion shipped, \$123; cash in bank, \$26,296; cash valth superintendent, \$497; cash in New York, \$25; sundry olaims, \$387; supplies on hand at mine, \$51,836. Total insolutes, \$125,939. Liabilities: Balance of dividend No. 77, \$6162; apprintendent's drafts out, \$21,884; billa psyaperintendent's fortal inabilities, \$32,432. Net redoutes October 1st, \$60,507.

resources October 1st, \$96,507.

A contract has been made this week to put

### Work of an Air-Hoist,

ing sreas, and on the other hand the waste of money in excessive sizes. Without, however, going into the calculations published by Mr. Gordon, we make a few axtracts from his paper descriptive of an six-hoist. He exerc to avoid on the one hand the undue restriction, by ded form or insufficient size, of the conductpractical construction of flues and pipes, so as tain coefficients and formulas concerning the flow of gases, and their applicability to the tion to the close approximate correctness of cer-In a paper read by Fred. W. Gordon of Phil-adelphia, on the Flow of Air and Other Geace, it was the purpose of the author to call atten-

Gordon, we make a few extracts from his paper descriptive of an air-hoist. He says:

Draft is an exceedingly tender thing to deal with. Its total head in the gas-flues of a blast furnace plant hardly ever exceeds 14 inches of water. And the immense quantities of waster drawes escaping to the atmosphere in blast tonne protection, being nearly equal to 15 tons to every ton of itom made, require construction, even with the heat knowledge of forms and size. On the other hand, the five to six tons of lorns made, require conduits of the wax forms of size in the distribution of size under restricted condities of fix a minimum of size under restricted condities of the five six tons of forms and it is highly important to fix a minimum of size under restricted conditients of the fixed size under restricted conditients of the fixed size under restricted conditients of the size under restricted conditients of the fixed size under restricted conditients of the fixed size under restricted conditients.

To the control of the state of

1.6. Co. 1. Solution of the option, 46 feet, average, 6.0.5.

1.6. Time was taken by a seconds-pendulum, the distance marked for time measurements being in marked for time measurements being 7.0 feet 6 inches. The temperature of the blast in main A was 110° E.; in cylinder, 60° E.

1. When the piston was on top and the cage on the oage was required demonstrated to be bettom, 600 pounds on the oage was on quired demonstrated to be being a west required, demonstrated to the outside of the ordinary weighed 340 pounds less than the piston marked in the total dead weight required, demonstrated to the total dead weight required to effect the savings when marked in the stable is a practice of the total dead weight required to effect the preaction of the experiments are given in detail by Mr. The experiments are given in detail by Mr. The subject of the confidence of the

Pressure in main

Pressure at b, 17 (set from main, pressure at b, 17 (set from main, pressure at b, 17 (set from main, desque to bottom of cylinder, opposite at bottom of the cylinder, opposite at bottom of the cylinder, opposite at personal in feature pipe, by ratios of areas of cylingple, by ratios of a cylingple, by ratios of a

Does of load, average to band of 2000 had .edi 680.0 · 190°F 1.24 lbs, per eq. in.

obtained the amount necessary for the purchase of the grounds, at Coloma, where the remains of J. W. Marehall, the discoverer of gold in California, are laid. With the amount reseat the State, for the erection thereon of the Marehall had monument, for which the last Legislature and Monument, for which the last Legislature MARSHALL MONUMENT.—Placerville Parlor of the Native Sons of the Colden West have

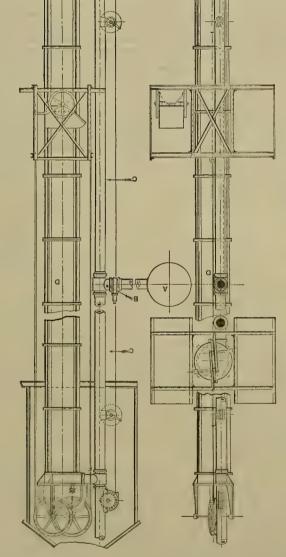
500, an increase of nearly \$6,000,000 over 1886. 10 1850. The aggregate assessed valuation of the contract of t ARIZOVA.—C. Meyer Zulick, Governor of Arizona, in his annual report, estimates the population of the Territory at 90,000—an increase of nearly 50,000 over the census estimate of 1881 The second of the population of 1881 population of the second of 1881 population of 1881 populat .0005\$ betairqorqqa

13,500 to the population. sent of the arrivals have remained, thus adding San Dreo, according to estimates in last week's Union, has had 45,000 passengers brought to her by rail and steamer since the lat of January. They claim that direc 30 per one of the according to the sail and the sail of th

Working Lead Ore in Nevada.

done mostly in reopening the 13th level and in The pump is 400 feet underground. A 15-horse which is still in progress and will open up a power dynamo will be used to furnish the elecpecting work during the past year has been danger of its being proven that they are tres- dies Valley mine, Wild Ross district, Nevada.

Passing the rights of others is slight. The pros- The company has water-power at the mill, but ent tant evelve legal bas stream to berne brought against the company for infringement in working the Speise, but the company is asmuch of its present product, Suit has been pected, and from this source the mine gains experiment has turned out to be all they exable to do this for some little time. The Speise lars during the past year, and is now paying dary dividends again, the president expecting to be has produced over half a million of dol-The Eureka Consolidated mine, Eureka,



AIR HOIST AT ISABELLA FURNACE.

test of the plant. The expense of conductors is as much as for the horse power in conversion. There would be no more loss in transmitting 40 horse power. In this case there is very little power to be earried. neer, estimates that two-horse power will be lost in transmission in this distance, and threeat the mine. Mr. Keith, the electrical engilarge piece of ground in which the superintend- | tricity, and a 10-horse power motor will be used

merly, and experiments prove that it is equally in worm gearing, as there has also been in steam engines for driving dynamos. It is now made on more scientific principles than fora power there has been great improvement made does. Since electricity has come into vogue as method of gearing down from the high speed of a forestric motor to the slow speed of a mining pump. Belts and ordinary gearing do not well serve the purpose, but worm gearing does. Since electricity has come into yours as There has been some question as to the best

bullion in transit, \$12,874; balance due on bull- purpose. while much better adapted for this special efficient transfer for transmitting power

fects in the hoisting engine. New material for some low-grade ore was found, but not in suffi-cient quantity to pay for extracting. Nothing has been done at the new shaft, owing to decient to warrant the expense to prospecting.

The 12th and 13th levels have been connected with an the 15th and 15th level and more parameters. ent thinks the chances of finding ore are suffi-

req and 100 to vipacity of 100 tone per changing the same has been received.

The reduction works and refinery are now

tab and armed its sands short proposed The sound of T

daced \$40,070.85, making a total of \$590,953.33. Resources: Bullion on hand at mine, \$36,901; the year \$550,882.48; other receipts The secretary's report shows bullion produce Lilienthal, F. A. Benjamin and H. R. Hutton. week, and the following gentlemen were elected trustees for the ensuing year: Wm. Fries, president; W. S. Wood, vice-president; P. N.

glish market, gold) was being managed by Col. Ranlett of this city for Eastern owners, and that when the mine was clear of water it would be ex-peried with a view of being offered on the En-olish wartes? the Union copper mining property (not Union transposition of a paragraph in last week's Mining Sammary, a sentence relating to the Union copper mine, Calaverae county, was appended to one concerning the Union gold mine. The editor intended to convey the information that the Union copper mining repeated. UNION COPPER MINE, -By the accidental

heretofore held without making the expenditure of \$100 each year, but it will be seen now that unless \$100 is expended annually the claim is

all classes of claims, whether quartz or placer, without reference to the date of location. Many placer claims located prior to 1872 have been

court holds that Section 2324 applies slike to lower court has been reversed with directions to enter judgment for Tillotson & Dixon. The

plaintiffs' view of the case and gave judgment for Morgan & Meal. The case was appealed to the Judgment of the

for them to perform only so much work as might be required by the local rules and cus-toms of the district. Judge Myres took the

under Section 2324, and that it was necessary

troversy, being a placer claim and having been located in 1855 or prior to 1872, did not come

sery for the plaintiffs to do \$100 worth of work each year to hold the claim. On the other hand, the plaintiffs maintained that the claim in con-

Binff, had done only \$26 worth of work for the year 1884. The defendants, Tillotson, & Dixon, loosted the ground in January, 1885. It was contended by the defendants that it was necessized the property of the plaintiffs to \$100 worth of work of the plaintiffs to \$00 \$100 worth of work

iffs in the action, Morgan & Weal, of Michigan rales, regulations and customs. A case arose before our Superior Court some time ago where it was admitted that the plaintas they had been prior to the passage of the Act, subject to the operations of local laws, on vein or lode claims, leaving placer claim decided that it was evidently the intention of Congress to require annual expenditures only As far back as 1875 the Acting Commissioner

similar to the proceedings prescribed by Sec-tions 6 and 7 of this Act for obtaining patents

1872, provides that the Act of uly 9, 1870, "ehall be and remain in full force, except as to optain a patent, which shall be The tenth section of this Act of May 10, each 100 feet each year for each 100 feet in length along the vein.

s located prior to the Act, \$10 worth for

The only reference made to expenditures in this is found in the fifth section, which provides that on each claim located since May 10, 1872, \$100 worth of labor must be done; and on the contraction of th

to that Act \$10 worth of work must be done annually for each 100 feet along the vein. The only reference made to expenditures in be done each year. On all claims located prior passage of the Act and until a patent is issued therefor, not less than \$100 worth of work shall These are that on each claim located after the a olaim, subject to certain requirements. governing the location, manner of recording, amount of work necessary to hold possession of

red to provides that the miners of each district may make rules and regulations not in conflict with the laws of the United States

among other things, prescribed a new mode of procedure for obtaining patents to mining olsims. The first section of the Act last referportions of the mining Aots then in force, and, The Act of May 10, 1872, repealed certain determined by the local laws, rules, regula-

deposit excepting veins of quartz or other rock in place. Meither of these Acts prescribed any annual expenditure, but left this matter to be

emended by the Act of July 9, 1870, and provision was made for the disposal of 'delims of usually called placers,'' including all forms of

The first general Act of Congress regulating the disposal of mineral lands was that of July 26, 1884, which only applied to veins or lodes of quartz or other rock in place bearing gold, silver, coinnabar to reoppor. This Act was manded by the Act of July 9, 1870 and pre-

claims, except where local laws apocified the amount of work; but now comes a decision of the State Supreme Court which upsets former

It has generally been supposed that annual

Expenditures on Placer Claims.

no beriuper son erew serusibneqxe

to vein or lode claims.

open to location.

EXPERIMENTS WITH GOAL GAS.—Some instresting expectable discovering experiments have lately been made by Mr. Witz, in order to determine the calorifle power of coal gas. The method pursued connected in the instance of coal gas. The method pursued competed of coal gas. The method pursued competed in the water steled in the water of salorimeter, the elevation of the temperature of which could be exactly mesanted. A business of a calorimeter, the elevation of the temperature of which could be exactly mesanted. A competency of a calorimeter, the elevation of gas at .0 degree which could be exactly mesanted. A competency of the calorimeter of trials led to the degree which could be exactly mesanted from a gas mixed with aix times a calorime of air. Before passing through the steled from a gas mixed with a stelled from a gas mixed with a collection of same gas had a caloring by puritying. If the face there are gas and a caloring by puritying. If the face of one volume of gas and the explosive mixture of one volume of gas and for partial man of a stelled for one than more than when fred with I.25 volumes of air to the caloring power is less by the caloring to when gas is mixed with air. When diluted with II volumes of arity for cont. It therefore decreases with diluted in the contrary, the caloring owner is less by the caloring volumes of air, the caloring volumes of air, the caloring volumes of air, Thus the effect of the extra dilution is inversely to what might have been dilution is inversely to what the might have been dilution is inversely to what the might have been also being the might have been the week of air. Thus the effect of the extra dilution is inversely to what the might have been dilution is inversely to what might have been also been also were the might have been and the contrary of the caloring the wolumes of air. Thus the caloring the might have been a caloring the might be a c

Moving with the earth's own rate, a celestial Moving with the earth's own rate, a celestial body would traverse in 50,000,000 years the distance separating our globe from the most remote of the 70,000,000 stars visible in the most powerful telescopes, making it possible that, known may have motions, any or every star with autable proper motions, any or every star with autable proper motions, any or every star ing the period commonly assummed by geologists to have elapsed since the first dawn of life. Intensely hot stars may have added materially to the carth's heat without coming sufficiently near to greatly derange the planetary orbits.

## SCIENTIFIC PROGRESS,

The Birth of Matter.

Human thought has never been able to form, a theory of the original market, life of force, any more than to conceive a beginning of time to layer been considered to the the 70 of the 70 of the form of the origin of matter, life of force, or limit of space. Of matter, life of the 70 of lawer been accustomed to think that the 70 of the 70 of the original and in presence of a distinate gualence, Mr. Wm. Crookes, F. H. S., guild and audience, Mr. Wm. Crookes, F. H. S., and in presence of a distinate gualence, Mr. Wm. Crookes, F. H. S., in matter fording to show that these acome have a series of brilling to some themselves evolved from simpler forms of matter searths, and to present it up into its fractions of the matter searchs and to be electric ourrent, the spectro-forms of matter forms of the control of th

SOLDERING CAST IRON WITH TIN—Many OTABERING CAST IRON WITH TIN—Many outside a tricles are made of cast iron variety decorated. The smaller articles of this budge decorated. The smaller articles of this anamer. Then the question artices how to manner. Then the question articles how to man different a question which puzzles many, but which can be practically solved. True, it is difficult to find a simple method, bocause cast iron has but a slight opportunity for the soldering can be made easier by first cleantre, which is not necessary when the first turn is of recent occurrence and the broken parts fracture is of recent occurrence and the broken parts are perfectly clean on their trees. With a breast parts are perfectly clean on their trees. With a breast should be continually secrubbed until they finally appear perfectly yellow, thus in a cervanty of the continually secrebed until they will be continually secrebed until they finally appear perfectly yellow, thus in a cervanty of the continually secrebed until they will be continually secrebed until they finally appear berievely of the fractery of the secrebed the continually believed the final sense being "day of the brassa from the fine writes very quickly. The brassa from the fine will make as brass is tinned, and then with more greater difficulty the parts can be soldered to-tinned just as brass is tinned, and then with no greater.

getner.

IRON AND STEEL RAILWAY CARS — The use of iron and steel in piece of wood in the construction of railway car bodies is urged now and then in this country and has been employed is unfavorable to the preservation of wood. An English company recently secured an order for ing to which the forest way on the climate and another manufacturer is building 300 similar cars for another road in that country, referring to which the Indian Raikong Service Galling to which the indian so in the indian service into not be string in it non vehicles with the tropical substitutions into ovens is certainly not a cheevilul one.

teache is going out of the way to court imperfection.

The abnormally large limits of temperature
within which a carbonized iron retains the plasttic character gives an exceptional scope for
studying its behavior by this kind of comparistudying its persentially a characteristic of comcondition is essentially a characteristic of compunnd bodies, not of simple once. As a rule,
the nearer any metal approaches to chemical
purity the shorter becomes the interval of plastic
ticity before lusion and the less the welding
to note that this law of molecular physics holding
good relatively even with bodies which are
to note that this law of molecular physics holding
to note that this law of molecular physics holding
flow subckances such as, asy putty and of gree
plasticity and yet will not unite by contesting
to not be adjusted closely to the same degree of
plasticity and yet will not unite by contact and
pressure of the surfaces. But two portions of appressure of the surfaces. But two portions of
a plastic mass, consisting of butter and putty
infinately mingled, will on contact and
infertuation of the butter of a weld. When a
well as effected between two portions of iron
well as effected between two portions of iron
of distinctly different composition it may be
of distinctly different composition it iron
of distinctly different composition it iron
of distinctly different composition it is not be

Жесньуюеь **Р**Ровребя.

When one connes to examine in detail a 50mone of the state of the st

An Unmagnetizable Steel.

mentioned, there is to some extent a chemical mentioned, there is to some extent a chemical as well as a molecular union. And, couversely, where chemical action is being dependent on for the so-called weld, the molecular union has, in reality, little to do with the ocase. Pushing the process of comparison one step further, we find still a phenomenon to the simple weld in the "regelation of fee"—an extreme case, but comparable. The material is plastic; and when the surfaces are brought into molecular contact, the same articion of parts encues. This action was formerly a standing riddle to the chemical play, and the same union of parts encues. This contact, the same articion of parts encues. This play, and the same into not parts encues. This beginners to contact, the same dimpossible to account for the further reduction of both the same articial states and contaction of the same articial states and contaction of the salicing water is squeezed out precisely. The albertner will not unite.—The shorts will not unite.—The shorts will not unite.—The shorts will not unite.—The shorts of the so

SplaW a at tadW

DETERMINING THE PLASHING POINT OF MINERAL OHLS BY ELECTRICITY.—The "dashing
point" of a mineral oil is the temperature able
which the liquid begins to give off inflammable
vapors. In America, this point is determined
by a simple electricial method known under the
name of the Seybolt process. The mineral oil
is placed in a vessel, open at the top, and heated
is placed in a vessel, open at the top, and heated
the distance apart hang just over the surface
of the liquid. By means of a small induction
of the liquid. By means of a small induction
of the liquid. By means of a small induction
and the semperature of the weter-bath being
fradually increased, the reading of the thermometer is taken at the instant the vapor
and the semperature of the water-bath being
takes fire. It is, however, said that this methskes fire, is in America one of commons
as the inductive is taken at the instant the teaulth,
as the inductive is the mether as the induction
of does not yield very concordant results, and
to devise some improvements in certrying out
the details; it is probably difficult to get an
scentrate reading of the there
accurate reading of the there
accurate reading of the there
present arrangement.—Electrician.

PIELLAR INVLUENCE ON CLIMATE.—In a paper The state of the cook of the states,—Lowered for the control of the fire that dwells in a taster, the published of the life that dwells in asture, the phenomens of the life that dwells in asture, the phenomens of the life that dwells in asture, the phenomens of the life that dwells in asture, the phenomens of the life that dwells in the suddentrol of earthquakes being cited. The peculiar test of the suddentrol of states of the suddentrol of DETERMINING THE FLASHING POINT OF MIN-HEAT FROM LIQUID FUEL.— Haphtha, which is burned in locomotives in the Caucasus, yields 90 per cent of its theoretic beating power, while not more than 60 per cent can be resilted from solid itsel. Petroleum is now the sole combustible of ships in the Caspian sea, and only half tible of ships in the Caspian sea, and only half is send to be only two-fiths of that which petrocost. The maximum force obtained be from cost is said to be only two-fiths of that which petroments have shown that a given weight of maphtha will take the place of 8½ times the weight of wood, although the theoretical difference is only 3 to 1. INSTANTANEOUS PHOTOGRAPH—THE MOVEMENT OF A WHEEL.—Instantaneous photograph phy, at the rate it is going on, build sin to change our opinions in many important patter. The wonders it has already accomplished in trevesling the motions of various animals, including man, is well known. But it has yet, in any important patter. In motion travesling the motions of various animals, its mission is completed, The latest solicuse in motion travesling the worlds to conquer before asid to have ended the whoel of a vehicle in motion travels faster than the lower patte, is asid to have ended of the spokes immediately while the lower ende of the spokes immediately will be motion and of the spokes immediately to a shout ten degrees. The photograph nost successfully expresses the fact that the wheel it represents is in rapid motion."

OHEAP SOUTOM,—Castner's new sodium-preparing process, by which caustic sods is distilled with an intimate mixture of coke and tilled with an intimate mixture of coke and telled with an intimate mixture of sodium to less the greated to reduce the cost of sodium to less than a fourth of its present price. As sodium has a fourth of its present price. As solium has a fourth of its present price. As solium has been largely used in the production of aluminam, this will greatly cheapen the old method of obtaining what must become one of the most important metals of the future.

PAPER FROM SEA-WEED.—A native of Japan is reported a bave recently invented a new process by which paper may be manufactured with sea-weed. Paper made in this way is very strong, almost untestable, and is sufficiently transparent to admit of its being used as winterapparent to admit of its being used as winterapparent to admit of its men many respects resembles old window glass.

Guupowder, is involved in the commencement in the use of gunpowder is involved in obscurity. It does not appear to have rivaled the use of the cream fundred and seventy-five is about the satiliest date mentioned of its use in Eugland. It was many years before it actively superseded the comment of the column o

the exact nature of electricity. The effects and the laws governing its action are well understood; but what it is, is still a mystery. Probably it is a mode of motion, like light and heat.

The causes which produce the electricity of thunder-storms and auroras are still a matter than the cause which produce the electricity of the causes which produce the electricity of the cause which produces are still a matter than the cause which is a constant. MATURE OF ELECTRICITY.-No one knows

STELLAR INTLUENCE ON CHIMATE.—In a paper to the Liverpool Astronomical Society, W. H. S. Monok suggested, lately, that the puzzilug climate variations recorded by the neer approach to the earth of intensely hot stars. This may have been due to the traveling of the star itself, STEEL, when hardened, decreases in specific gravity, contracts in length and increases in di-A SOLDERING FLUID composed of a feaspoon-ful of chloride of sinc dissolved in two ounces on said bas distances and translating and only a

side but groomed his horse, and busied bismed bismed bus don't but a board as and board as and board as and hour or two in the stable every day. In the nearly case, and years and years ago, names ago, sense and years ago, names ago, sense and years ago, sense a paison it, the healthiest places in the world. For those who love borses the stable ours would be such a place and a paison who present a paison who present a paison who present a paison who present a paison who were that his directions of the paison who was a paison when the paison who had be lotled at the business and the place of the paison who was a paison when the paison when the paison when the paison was a paison when the paison when the paison was a paison when the paison when the paison was a paison when the paison when the paison was a paison when th

USEFUL INFORMATION,

Paper in the Mechanical Arts.

There seems to be no and to the multilari-ous uses to which paper can be put in the men-obnical sets and in the manufacture of almost every article which enters into use. In many cases it is even usurping the place of iron and steel. The latest paragraph in this direction is from Chamber's Journal, which reads as fol-lows:

Thom Okamber's Journal, which reads as 10.

North, which one would think were polished are free from swelling, oracling so lightly and mapogean, but they are they aring so lightly and are free from swelling, oracling or warping, are stemped stone of two thick paper boards as fearned and on two the gether with gine and potests and then rolled gether with gine and potests and then rolled phrough heavy rollers. These doors are first phrough heavy rollers. These doors are first phrough heavy rollers. These doors are first particularly when the vary for our constant with a water protect that the ordinary way. Few persons can detect that the used as one made of wood, particularly when used as single way to be getting very scarce in this country, but picture-frames are need as the first warm of the control of the country, but picture-frames are need as a so periost that no one could detect them with out cutting them. Paper pulp, giue, linesed of the contring them. Paper pulp, giue, linesed of and carbonate of lime or whiting are mixed of paper and detect them with out cutting them. Taper pulp, giue, linesed of paper and detect them with out cutting them. Taper pulp, giue, linesed one perior gint on a thick cream, which, on being allowed to cool, is run into molds and hardened.

Itsawing-rooms can be set off by hardsome places.

bardened.

Jisawing-rooms can be set off by handsome planed and hardened.

Jisawing-rooms can be set off by handsome pleaces manufactured from paper, a French invention. A beautiful musical instrument of great this kind has lately been an object of great cariosity to the centire case is made of savents and musical musical savents of Paris. The entire case is made of savents of paris. The centire case is made of savents of paris. The centire the savents and more dealers, while, prilliant polish. The legs and sides are ornamented with archesques legs and doral designs. The exterior and as much of the interior as can be seen when the instruction and as much of the interior as can be seen when the instruction are nearly specified in a converted with wreaths and melasting artists of Paris. The tone of the instrument is said to be of excellent quality, changes are not loud. The broken, alternating though not loud. The broken, alternating characters of the organic is replaced by a rich, what that of the organic is replaced by a rich, what that of the organic is replaced. One something save been made. Only two of these in still on extribution; the other has been said to the organic is still on exhibition; the other has been sold to the Duke of high intrice.

THE USE OF SUARKS,—Persons who dislike snakes, says the New Orleans Pstronyums, consideres, says the New Orleans Pstronyums, considered they are not without use will, I hope, appear in the course of this work, were it necessary to presche the start of the say to presche the start of the sta

HORSE BREAD.—Horse bread is still commonly made in Sweden. It is also commonly made
and used in Tyrol and in certain parts of Switz.

drivar stops at a roadside inn, and, before he
driver stops at a roadside inn, and, before he
buys snything for himself, he buys for his borse
driver stops at a roadside inn, and, before he
buys snything for himself, he buys for his borse
driver stops at a roadside inn, said himself, he
tesh, the size and shape of a Yorkehire yule
tish, the size and shape of a Yorkehire yule
tish, the size and shape of a Butter in arge,
tish, the size and shape of a Butter slice with
mare, very likely—knows well what all this
mare, very likely—knows well what all this
mare, road lines, and dnally, perhaps, laye its
such or strips; munches slice after slice with
some or significant of a meal, are content to crumble the
bread into a trough, and in that case the horse
desirous of a meal, are confernt to crumble the
will not only eat all the larger pieces, but will,
will not only eat all the larger pieces, but will,
with teeth and tongue, take on orunghie the
and crumb that strews the fall on the trough,
and crumb that strews the fall on the trough,
and crumb that strews the fall on the trough.
Such are bis are to the merits of caten

A RIVER OF IME.—In Algeria there is a small stream which the chemistry of nature has constream which the chemistry of mature by the union of two rivulets, one of which is impregnated with iron, while the other, meand-sring through a peat marsh, imbibes gallic acid, another ingredient in the formation of ink. Letters and other manuscript matter are activated with this singular matural compound of inc.

UTILIZING SANDUT .- A new industry has need to be negatived in Bangor which promises to be-

CROSSING THE ATLANTIC,—Bisemenips occoseding the stream of the seven days are ing the Atlantic in sees that seeven days are becoming so common as to attract only ordinary observation. The Unbria is sutified to carry observation. The Unbria is sutified to carry quickest trip both east and west, the former quickest trip observations and west, the former quickest trip observations and west, the former of days at hours and 12 min.

12 miles or at the days at hours are not of the treat is practically her equal, as she made the treat tom Queenstown to New York in 6 days at hours and 47 minutes, one day running 480 miles and the rate of 20 miles and hour be days and the state of 20 miles and hour. But the greybounds of the Omeral ince or not tool to the the part of the treat of the ordines of the ordines of the ordines of the treat trom New York to Southampton last January in 7 days 13 hours and 50 minutes, and the new resel now building, to be known as the Lahn, and which will ink, to be known as the Lahn, and which will prospect of vieing successfully with all componence of the will have 2000-horse power in petitors, as she will have 2000-horse power in

Емејуее Ротея,

aborate experiments on journal triction have lately been conducted by Mr. John Goodman, they been conducted by Mr. John Goodman, a stud. Inst. C. E. These experiments showed that the lubrication is most parlect and the friction at a minimum when the width of the brass subtends an angle of trom 80 degrees at the center of the shaft. This has been very generally recognized, but the conclusion that the lubricating groove abong the center of the brass should ran clear to the shaft. This is not slways followed in practice. The experiment of the brass should ran clear to the shaft of more showed that Inbritation by means of a ments showed that Inbritation by means of a siphon dropping oil at intervals is a very impersion that the lubricating groove and the pressure is siphon dropping oil at intervals is a very impersion and the groove along the crown of the brass does not run out to the ends of the brass. The pressure on the journal forces the brass of the did in the oil is offer that over again antili its lubricating propvious brains and the groove and the lubricating propose of the constant of the pressure of the constant of the pressure of the did in the oil is often wasted before it has done of our solid out. A lubric of the did in the oil is often wasted before it has done efficient work.

A Queer Cray Mara as Smokerance.

A QUEER CRAFT—A MAST AS ASMOKESTACE,

The steamer J-sesie H, Freeman trom Bostom a recently arrived at San Francisco. She is a setemer of barkentine rig, having three steamer of barkentine rig, having three formerly a steam-schooner and plied between formerly a steam-schooner and plied between using her mizzen mast for a smokestack, and as the passed along the oity trong with spouring ort of her mast for a smokestack, and head, she attracted considerable wonderment. The object of this peculiar rig is economy, beneat, she attracted considerable wonderment. The object of this peculiar rig is economy, beneat, and the attracted considerable wonderment. The object of this peculiar rig is economy, beneat, and the attracted considerable wonderment. The object of this peculiar rig is economy, beneat, and the thing of the trade of the constructed for the same and woners at the Unnon Iron Works, She is wowned by J. M. Knowles of this city and will go into the trade between San Francisco and the Hawaiian islands,

DEALITIME THE CITY OF MEXICO.—The Bucyrus Construction Co. have begun active operations of the carrying out of their contract for the carrying out of their contract for the carrying out of their contract of the carrying out of the work, has arrived the definitions. Work will be first begun at San Cristopal estions, Work will be first begun at San Cristopal estion, on the Vers Cruz railway, where the great scows for carrying the railway, where the great scows for carrying the railway, where the great scows for carrying the on the canal. The boom that carries the bucket on the canal. The boom that carries the bucket machine will be of about one cubic meter capacity. This best of about one cubic meter capacity. This cateline will excavate from two to three bucketisful per minute and commenced active operations bout the first of Cotober. Twenty-one tone of machinery and campiles are on their tone of the contract of the contract way by rail to that city.

A RAINGAL TO BAGDAD.—It is announced that a concession has been granted by the Turk-that a concession has been granted by the Turk road to Bagdad. The concessionaries are the present lessees of the Haidar Pasha to Sourain. It will be of standard the Haidar Pasha to Sourain. It will be of standard gauge. The Engineers ees in the office on the part of the tree of the part of the tree of the part of the concession a strong desire on the part of the tree of the part of the concession a strong desire on the part of the tree of the part of the tree of the factorian of the concession as the factorian and considers that it opens a feet of the factorian and considers that has been a feet of the fact of the factorian and considers that a factorian and selling and sufficient and suffici

Decentime the Sahara.—With the sid of object of the solution of the desert of Sahara is seen to see the solution of the desert of solutions is and solution of the Lower Sahara is an immense basin of a sake the freed are forming fresh tessing with said and success, so that the number of outlive test of tracts is increasing rapidly. The tracts of the same of the sam

THE HUDSON KIVER TUNNEL seems to be in a bed way—decidedly apsemedic. It is reported that work on the tunnel has again been suspended, the reason it is said being financial. Bying as been carried on only in the north tunnel, which has been worked for 1840 feet from the shaft, or one-third of the distance across the river.

come quite an extensive one. Every mill on the river wastes great quantities of sawdust. It has not been available for shipping because of its bulk. Now a hydraulic press has been invented to press the sawdust and reduce its bulk some 75 per cent, and in this shape it can bulk some 75 per cent, and in this shape it can be be beloned.

DAUGURGOTS FLIES—STRAKGE APPLICATION.—

DAUGHER CATHER, a farm band, about 26 years of age, working near Belleville, Missouni, bas had age, working near Belleville, Missouni, bas had a singular experience the past few weeks. He was attached by poisonons dies, worked on a farm in Texas, and one day he lay not the fields to take and one day like a seleop he was attached by poisonons dies, which had orewise they laid their eggs. Criting nostrile, where they laid their eggs. Criting nostrile, where they laid their type head over his face and it he head to be suffered which had been came North about 10 days ago, He had been audering for week with a tarritiness in the bead, which nearly blinded him. Besides that, he suffered to mad for the past few days with a terrible pain, tice bas described in the order of the latter from the sufference in the latter from the sufference in the latter in the correct in the latter from the sufference in the latter of heat and in 10 to break them with a quarter to half an inch in length, so hard thet it was almost impossible to break them with a heat of the manner. The month is been with a sufference in the manner. The manner was very much relieved, but it is supposed that his beat is still full of the bar the southern line of the state of near further or the them the southern line of the State of an order. A LIVING POPOUN,—In the Eastern sees, from Ceylon to Japan, there abounds a little fath, belonging to the genus Chatdoon, which see the blow-pipe used by boys for projecting pears the blow-pipe used by boys for projecting pears and putty. The nose of this fish is a sort of pelling a drop of water with force enough to bring down a fly. Its aim is very accurately bring down a fly. Its aim is very accurately bring down a fly. Its aim is very accurately bring down a fly. Its aim is very accurately bring and it reside maters on a weed or tuft of grass near the water. The fish castiously approaches, the water and it teredy misses for the castiously approaches, teaching and on a water, teaching projects its trabe from the water, the set of the castiously approaches, the water of the water of the castiously approaches, so he swallowed by its oaptor.

Takking Our Grand Stors,—There are serven.

TAKTING OUT GREASE SPOTS.—There are several and efficient and several and efficient and several and efficient and several ereal effectual means of taking out grease spots.

Chlorolorm will do it; so will saft dissolved in and ammonia. Or you can wet the place with a mononia-water, then lay white soft paper over the ammonia. The new for the several ereal several ereal its and iron with a hot iron; or trub French chalk on the wrong side; let it remain a day; spite and siron with a prosecution on the spot or the several ereal ereal

RASPING THE HOOF.—Says an experienced blacksmith: "More horses' feet are ruined by ray other cause." This outside coating is impervious to water and does not evaporate. "When broken into by rasping, the moisture of the foot evaporates, required by the hoofs dry and brittle.

H10H LICENSE.—It is said that high license has increased Chicago's revenue from that source from \$200,000,000 a year to \$2,000,000, and has decreased the number of saloons.

INDUSTRY AND SCIENCE.—An international exhibition of industry, science and art is to be held in Glasgow, Scotland, extending from May to October, 1888.

Seven Ways of Curing Warsh. Any of the following named remedies, says the following named remedies, says the following named remedies, says the fosten the order warts and permenant of the formally our warts and remove them: 1. Moisten the warts and rube always and rub sel-ammonie well on them right and rube is a forthight a spolicition will involve gall two or three times a day. 3. Exp. look's gall two or three times a day. 3. Exp. look's gall two or three times a day. 3. Exp. look's gall two or three times a day. 3. Exp. and apply it to the warts. 4. Pare the warts and apply is to the warts. 4. Pare the warts and apply is to the warts. 4. Pare the warts and apply is to the warts which will soon be oured. 5. Touch the wart which will soon be oured. 5. Touch the wart with vincedaily, occasionally garing the wart with vincedaily, occasionminutes, and repeat several times during the minutes, and repeat several times during the minutes, and repeat several times during the wart with a context with a diluted one. Will they are green with bean leaves and they out they are green with bean leaves and they will disappear after a few applications. 7. Rub will disappear after a few applications. PLASTER BUSTS may be cleaned by dipping them into thick, liquid cold starch—that is, clear starch mixed with cold water—brushing them when dry.

GOOD MEALTH,

THE STABLE CUEE.—A correspondent of the Boston Post write.

Boston Post writes as follows: "I was not set in the best of health, apparently, an old streed, in the best of health, apparently, an old sequalitients one whom I had supposed to be filling a consumptive's grave long ere this. In answer to my inquiries he told me that when the medito men had exhausted their resources he definite to my inquiries he told me that when the medito men had exhausted their resources he estermined to put in practice a plan of his momental form the meditors. But in the second of Virginia, where he established himself in a farmhouse, and bought a farm bour the neighborhouse, and bought a fart about the neighborhood. At they, he told him about the neighborhood. At they, he told him about the neighborhood. At they, however, he told a stam, and we askeds more than 15 or 20 minutes at a time, and he had to pull very soon if the horse broke into a trot. Every day, however, he can be can be to a fact of any and a couple of health with very little stronger, and in a couple of the second in the action of the second and the attention of the second of the string and the second of the area of the second of the second of the action of the attention of a trot, it has a second of the area of the second of the action of the second of the second of the action of the second of the secon EFFECT OF AN IMAGINARY INJURY.—A GIT.—A GIT.—A GIT.—A GIT.—A GIT.—A GIT.—A GIT.—A GIT.—G. GIT. PETROLEUM AS A MEDIOINE.—Dr. Blache states, in the Bulketin Thermogentique, blat a treates, in the Bulketin Thermogentique, blat a treates in the Bulketin Thermogentique, blat a treater of petroleum, having been proinbited by a prefect from distributing petroleum in medioinal dose to its all doses, the fact led to an inquiry being made as to its alleged utility in affections of the cheek as the result, that in obvonic Virginia being that first preprimented with Dr. Blacke at see, as the result, that in obvonic bronchitis, with abundant expectoration, it capially diminishes the amount of the secretion and the paroxyams of congrings, and in simple formation of the secretion bronchitis, rapid amelioration has been obtoined for too shorts a time as yet to allow continued for too shorts a time as yet to allow beyond the fact that it diminiahes expectoration, which also loses its purulent obaracter. The petroleum is popularly taken in doses of a teaspoonful before sech meal, and after the free the come persons disappears.

MEN.—Galton has pointed out some very curious facts concerning the oblidren of profession one facts concerning the oblidren of profession ity of the members of some of the largest soien; this cocieties of London, that the legal profession presented the most eminent men and the towest idiots. The medical profession presented the most eminent men and the largest sand leadly elergemen, who produce the manner and the largest sand leadly elergement, men and the largest number of iminent men and the largest number of idiots and feeble-minded. The lawners are stoned or of idiots and feeble-minded in the law men as the clergy. The clergy gave origin to six times as many eminent the law men as the clergy. TELEGRAPH WIRES IN CITIES.—The troubles attending the carrying of felegraph wires in cities on poles at the usual elevation are many and well known. Placing them underground esticuely what is known as the "Iflad tower system what is known as the "Iflad tower system what is known as the "Iflad tower system" has been introduced into St. Louis, with they are out of the way of the Tire Department. The bight of ordinarily high buildings, so that they are out of the way of the Tire Department. The towers may be from 400 to 1400 feet apart, the streath, and may be used for telegraph, the streath and power purposes, including wires to turnish electric power for street rail-ways. The standards of the towers will be of large pipe, and will also be used as stand-pipes under control of the Fire Department, under control of the Fire Department, under control of the Fire Department.

WOMEN AS DOCTORS,—The proportion of men to women in the medical profession is 35 to 1. There are now 5500 women holding first-class medical diplomas, and sil of them have won their sheepskins since 1850.

₹97

## MINING BUMMARY.

### CALIFORNIA.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

WOOD'S MINE.—Calaveras Prospect, Oct. 15: We have beard several good reports from the Wood's mine on San Antone creek. There are several fonct of on the dump at the mine and a rich body of ore has been opened up in one of the lower leads during the last week.

The ore now being mined will go from \$500 to \$500 to \$600.

Modoc.

Another Coal, Mink.—Independent, Oct. 13;
Supervisor Jacobs of Lake City dropped into the orlates of soal, which he said was face and left a sample of coal, which he said was creek canyon, about two miles above the policy where the road toresees the creek. Mr. Jacobs says that after the cloudburst, which occurred on the that after the cloudburst, which becourted on the that after the cloudburst, which become on the bedwards of the creek. Mr. Repart of the point the canyon, discovered among the debris that had Jacobs left home, the esbait was eight feet deep, and for about two miles, Mr. R. Deggan to sink a shaft fore some specimens which proved to be seed of the creek. Up to the time Mr. Jacobs left home, the sbait was eight feet deep, Algored down some specimens which proved to be so a some of the creek. Up to the time Mr. Industry the one was not continuous for the depth, there is a large body of the vein was not continuous for the depth. All though he coal swisting in that there is a large body of the creek. Up to the time Mr. The specimens that had not a supervised that there is a large body of the creek. Up to the time Mr. All the vein was not continuous for the depth. The specimens that have been taken out have undergone a fair test and readily burn in a blacksmith's forge, fair test and readily burn in a blacksmith's forge.

BODIE BULLION.—Esmeralda Wesses, Oct. 15: Joe Maguire was a passenger on the Bodie stage last Tuesday, or a route for San Francisco. He informed the writer that he shipped builton to the value of \$25,000 last Monday, which is the proceeds of three months' work on his contract in the Bodie mine, at months, work on his contract in the Bodie mine, at Bodie. The lease does not expire until next February, and Joe has a number of men employed taking out large quantities of ore.

Mono.

Inyo.

PAYING WELL,—Inyo Index, Oct. rs: Jos. Diaz, the recent strike in the Lensch mine holds out and the ore now being mined will go from \$200 to \$300 to the ton.

URIBYOTEB.

El Dorado.

GRIZZIY FLAT.—Placetville Observey, Oct. 11:

H. H. McClennan, superintendent of the Melton mine, Grizzly Flat, says there is a healthy sculvily in mining ciroles in his neighborhood, and that the general prospects were never brighter.

AIMBORING.

Ambador.

South Spring Hill.—Amador Ledger, Oct. 15; 16 South Spring Hill. The only work on hand is repairing the fasht, which gives employment to four repairing the shaft, which gives employment to four men. At the mill severything is at a standstill, washing for water, The ore bins are full, but milling is an increased water supply for the canal. Archibald and lines and a state supply for the canal. Archibald get the matters of the Mmador Queen Minning Co.

By McCaw of Oakland is in Jackson endeavoring to get the matters of the Amador Queen Minning Co.

By McCaw of Oakland is in Jackson endeavoring to the order of the Minning Bureau is in shape for fines on the Machine Handsulf and the county, collecting samples of wall rock from the various mines on the Machine Handsulf in the order of the Minning Bureau is in the various mines on the Machine Housen is the insume of the Minning Bureau is the order of the More and Merian Handsulf is now owned by Stockton paties. Plans, which is now owned by Stockton paties. Plans and the water of the More and the is the tone and the water of the More and More and I was and the feel out so to the More and the is the contract of Stockton. It is hopped this is the income of steady work upon this property, as the cost business of the safe of the superior is the cost business of Lancha Plans would soon develop into a thriving the industry.

If the cost business is a decident of the superior and industry.

the many control of the many control of the said country. The true who is the maning works on the Brunswick stranger about completed, only requiring the funshing to beling about completed, only requiring the funshing the largest water-wheels for pumping and hotsting, the largest maning the cast in diameter, which is as large as any of the mines a large day. The medium will be done in the next two or three days. In the shall be done in the next two or three days. In the shall be done in the next two or three days. In the shall be done in the next two or three days. In the hast of the mines a large station has been cut out at the first or adit level, and the shall be done in the shall. As soon as the water-power at which countered, but not been out out at the first or adit level, and the shall be used by the shall be the shall be as the property of the shall be the shall be the shall be the shall be as the shower of the shall be the shall be made, it turned on the sinking of the shall expend with the which occurs to the surface and cystallises on the rocket between the shall be speny of alum which showing in the shall be shall be shall be made, as the ground is favorable.

ALUM AND KAOLIN MINES.—Foothin Tiding:

Linch of the surface and cystallises on the rocket becomes to the surface and cystallises on the rocket which of the shall be speny of alum which shall be made quite a collection of this information. The deposit is large and some of the sing with it ton. I the same diggings, and close to the shum, a bed and of the solin will be sent to the sulum, The deposit is large and some of the solin will be sent to the sulum, the same diggings, and close to the shum, as bed and of the solin will be sent to the sulum, and most beautiful samples of the she mine of a linia specimens were shown at the late the shall most beautiful samples of that the same diggings, and close to the slum, will the shall most beautiful samples of the she may the shall the could most beautiful samples of the state of the condition of the s

TO START UP SOON.—Neveda Tvanscript, Oct.
15. Wearly all of the machinery needed in increasing the capacity of the Delhi quarte-mill from 8 to foundry at this city, and it is expected the enlarged mill will be in operation by the first of next month.

The Delhi continues to produce large profits,

whater — Mevada TyranWATER-POWER IMPROVEMENTS.—Mevada Tyranscript, Ocl. 19: W. J. Organ came down this week
from Washington township, where he has had charge
of the construction of a water system to turnish
power for the Washington quartz mine at Ormonde.
He built restly a mile of ditor bar and fumer. In the
South Yuba river the constructed a dam 12 feet high
and too feet long at its top. It is made of logs 30
inches in diameter and 65 feet long, holted to the
bedrock so fruily that there is no likelihood of it
being injured by floods. It raises 500 inches of
water into the ditch.
Water into the ditch.—Wevada Tyranscript, Oct.
To Stark IU & Soon,—Mevada Tyranscript, Oct.

able producer. The producer.

GOOD ORE PROM THE BANNER.—Nevada Vrons-GOOD ORE PROM THE GOOD OF COUNTY OF COUN

To RESUME.—Estate the Actus, Oct. 15: The Gas. Actus, Oct. 15: The Gas. Actus, Oct. 15: The Gas. Barborne District.

Aced Bank, one of the bullion-producers of a year sego, is about to resume operations. John Siriket series are in the Green that the Green of the most substitution of the Green false that the Green false that the Green of the most valueble locations about to commence operations on the Spread Eagle. This is said to be one of the most valueble locations in the district. Ed Woods thinks the prospect for the Lapanta is splendid. Work is being vigorously prosecuted by the lessees. Work is being vigorously prosecuted by the lessees. The North Sist is brighter than ever. A little more against invested in this property would stone the cut of cut district being significantly on the lapanta significant series of the cut district being significant than the comming, as it would show conclusively that the district will pay good returns on all investman. mine on Monday.

Ore Shipments—Sentined, Oct. 18: During the past week ore shipments were made from the mines of the district to the Richmond works—Jacknon to Cons. Honore, During to tons; During son mine, 4c tons; Wildemsburg, 19 tons; Dunderson mine, 5c tons; Waldemsburg, 19 tons; Dunderson, 2c tons; Manhourg, 18 tons; Stons; Markenderburg, 10 tons; Hamburg, 18 tons; Markenderburg, 10 tons; John-barned, 19 tons; Markenderburg, 10 tons; John-burg, 19 tons; Markenderburg, 10 tons; John-burg, 19 tons; Markenderburg, 19 tons; John-burg, 19 tons; Markenderburg, 19 tons; John-burg, 19 tons; Markenderburg, 19 tons; John-burg, 19 tons; Jo

TO START.—Belmont Coursey, Oct. 15: It is expected that the Monitor-Belmont mill, south of town, will be statted up on ore from the Barcelona mine on Monday.

SCORPION,—The east drift on the 300 level was daysneed about 18 feet. There is no change in the

OEST.—This mine is producing good paying ore, which is worked at the Briggs mill, It comes from the winze in the tunnel.

BALTIMORE.—Are still cleaning the 338 level drift. The pumps are running and handle the was-constant.

ALTA.—Still upraising on the 725 level of the Keystone vein in ore and stowing it away until the nill starts, which will be the latter part of the month, OCCIDENTAL.—Are working on Mo. a upraise too feet below the upper tunnel and running drifts north and south in the vein. OFST.—This mine is producing sonod assuing orga-

then the mills of the Crown Point and Belcher group of mines.

ALPHA AND EXCHEQUER,—Thee shaft in Alpha is 30 feet below the east level. There is a good deal of water encountered in this level, and it is believed of water encountered in this level, and it is believed that the belound for the water to the Suitto tunnel.

OPHIR,—The west diff from the bottom of the winze on the 1300 level was advanced is level, it is large to connect with the Ophir 445 [Veel. The later is all libeing advanced in ore. If the tunnel is still being advanced in ore. No crosscutting is being done in either the winze or tunnel.

HAVWOOD.—The winze or tunnel.

HALE AND WORDSS.—Work has been resumed throughout the mine. The repsired gallows-frame being done in either the winze or tunnel.

ANDES.—Still repsiring the tunnel cannel on the 1300 works to perfection. The winze on the 1300 works in the work will soon be completed. On the quarts, from work will soon be completed. On the west drift started.

MONTE CRISTO.—The lessees have resumed work west drift started and drift is started. On the short will soon the completed of on the sand side extracting paying ore, which mile sind a sin the mine and are extracting paying ore, which is shipped to Tom Hulley's water-wheel mills for teating the completed of or many the starter-wheel mills for teating to an or the case of the duction.

ALTA.—Sill up or sud stowing it sway until the Keystone vein in or sud stowing it sway until the Keystone vein in or sud stowing it sway until the

un the mills of the Crown Point and Belcher group

SECREGATED BELCHER,—The upraise shove the 1300 was advanced be fore and ablows quarts assaying irom its to §39 per ton. There are no indications yet libst the Carson river can afford sufficient power to

the expense of driving the southwest drilt on the cypense of the prospecting work thereshout, and a series to improve the cypense of the c

More and the property complete the property of the property of

RICH RIVER MING.—Sonore Democrat, Oct. 15;

The fact of I, R. Moffit baving found in the Tholumne.

The fact of I, R. Moffit baving found a rich and a rich and the public generally. Way back in particular and the public generally. Way back in the early mining days the trver-bed was exceeding the early mining days the trver-bed was exceeding ring to a great back on the dead as a since a since inter to a great back in the least of the fact of I. Moffit in the fact of I. Moffit in the fact of inding all the engage and the believer of the condition of the controlled with the control of th

\$6000. Jim Sallee can work that ore down.

Trinity.

CLOSED DOWN.—Trinity Journal, Oct. 15: Mr.
Rollins, superintendent of the Benicia mine at Eastman guiloe, was in town at two days ago, and informed us that work on the mine had been susformed us that work on the mine had been susformed us that work on the mine had been susproved a complete shilure and it is more than probable that the present company will not expend any
more money or labor in the value hope of recovering
the amount already toolishly spent.

MINE SOLD.—We have been informed that the
MolDonald Bross, have sold the Batted mine, at
Deadwood, to San Francisco parties, and that poswe understand, is 5300,000.

ONE China wing-dam company down the river
we understand, is 5300,000.

ONE China wing-dam company down the river
we are all the strength of the company of the river
is not a large quantity, but probably a great proportion of that is profit to the company.

Troublands.

Down Mountain,—The Iron Mountain mill turned a couple of bricks a few days ago worth about 0.00. Jim Sallee can work that ore down.

hancook celim, which is hown to be a good paying one.

Pinmes.

Pinmes.

Green Mountani,—Greenville Bulletin, Oct. 12: Several days ago, attechments were upon on the personal property of the Green Mountain Gold Minmes.

The really is covered by a mortgage of about \$35,000, held in New York. The really is covered by a mortgage of about \$35,000, held in New York. The really is covered by a mortgage of about \$35,000, held in New York. The really is covered by a mortgage of about \$35,000, held in New York. The really is covered by a mortgage of about \$35,000, held in New York. The really is covered by a mortgage of about \$35,000, held in New York. The really is covered by a mortgage of about \$35,000, held in New York. The really is considered will probably operate to prevent other corrections of the coherance of the property, which is said to be considered by piling on attachments.

Inco.—Cor. Shasts Conversy. Oct. 15: Pt. Gibney in the black of the property, which is said to be jooking better now than for some time past.

Ico.—Cor. Shasts Conversy. Oct. 15: Pt. Gibney is to be gained by piling on attachments.

Ico.—Cor. Shasts Conversy. Oct. 15: Pt. Gibney is the object of the property, which is said in the black of the down 65 feet with bits Arizona shaft. A croscenus in the looking better above to make the stream of the see nothing to be gained by piling on attachments.

Iten.—Cor. Shasts parties fave two men at work on inson & Son are taking good ore from the Black good ore. J. P. Wright is taking out ore from the good ore. 1. P. Wright is taking out ore from the savent work on the Andreas Creek ledge, Schiland & Hubbarke have a good ore from the straing son his Mannania ore. Manna is taking one ore from his is at work on the Andreas Creek ledge. Schiland & Hubbarke have a good ore in sain see taking some staking some and the second ore in the form the staking some is the second ore. 1. P. Wright is taking out ore from his is an incomplete the second ore in the foreit of pricks see well with the second ore in s

\$1000. Over a dozen important quartz locations bave been made ou Knownothing creek. Everyloody is making money in that vicinity, and the opinion ion is expressed by practical miners that a year will find that district the most important in the county. Our Soott Bat correspondent sends the diolowing: Spepard & Co. bave simost completed their new Spepard & Co. bave simost completed their new Spepard & Co. bave simost completed their new Industrial. They have struck good prospects in the mine, taking out in one day \$500. We are confident that in the near tuture Soott river will be one of the leading quarts-mining localities in the country, and we need is machinery to properly work the fines. The Pole Cal mine is also showing indications of something good in the near tuture. This tions of something good in the near tuture. This since of something good in the near tuture. This Hop Pole Cal mine is also showing in different in the sear tuture. This is mine is owned by Jacobs, Reynolds & Co. Mr. G. B. Smith and Mr. Ed Kennedy are opening up the Harrocck claim, which is known to be a good paying one.

MHAT MINES ARE DOING.—Prescott Course, and the control of the cont

### ANOZIAA.

WORK,—Silver State, Oct. 15; Considerable work is being done on mining claims in this district.

The Bartholdi ledge, discovered last spring and owned by Thomas Shone and F. P. Snapp, is producing some very fine ore. The lead is promises to be one of the best mines in the district.

### Willow Creek District.

PARADISE VALLEY M. Co.—54702x Stats, Oct, 15;
PARADISE VALLEY M. Co.—54702x Stats, Oct, 15;
Have broken through into winze drift from the west
the crosscut, soo level. The north and south drifts from
the bottom of Mo. 2 winze, 150 level, were about two
feet above the floor of west crosscut. It will require
the crosscut, lay track and put the chute in the
of the crosscut, lay track and put the chute in the
winze, after which we will be able to break ore as
fast as we can raise it. Everything going usually
well at mine and mill.
Willow Creek District.

DIAMA.—Times-Kreview, Occ. 14; Fair progress base been made with the crosscut from the type progresses alovely. The crock still continues base for made with the crosscut from the type progresses alovely. The crock still continues batch the language of the Morth Belle Isle.

YOUNG AMERICA SOUTH.—The formation passed the pass week fass been based to made with a page resease showly. The crock still be coccur.

YOUNG PRIVE.—The grading is on the ground; and the work of erecting same will be publied up this set of the supplies for the winter are all in the machinery bauled up this said will be publied to the work of erecting same will be publied to the same will be publied to the will be solven the same will be publied to the same will be publied to the work of erecting same will be publied to the same will be publied to the work of erecting same will be publied to the same will be publied to the work of erecting same will be publied to the work of erecting same will be publied to the work of erecting the same will be publied to the same will be publied to the same will be to the same will be publied to the same will be to the same will be publied to the west letteral from the same will be same will be publied to flow-grade along the same will be sucked to the west letteral from the same will be sucked by the well as all points. South drift from Mo. 1 eroscuts, 100-10 level, has been made in carrying through the first stope opposite form Mo. 1 eroscut, 300-100 level, has been removed and drive shows considerable improvement. South drift from Mo. 1 eroscut, 300-100 level, has been such drift from same point, eight feet. The court of the west ledge has been strended as deverying the water in the work of connect.

We want well at all points, eight feet. The court of the west ledge has been extended on the west ledge her estoned to same point, eight feet. The court of the west ledge has been extended and everywell and everymeling shows to the west ledge her extended on the west ledge her extended and the west been such

Tuacarora Diatrice.

DIANA.—Times-Review, Oct. 14: Fair progress
has been made with the crosscut from the 150-fool
evel of the North Belle 1ste.

the winter, but work on the mines is being pushed aboad. A contract has just been fel for studing the shaft on the Juniper too feet deeper. The last run of the furnace was very successful in every particular, Times will be good at Sprucemont next spring. The studies will be good at Sprucemont next spring.

MINING AND SCIENTIFIC PRESS.

NOTES FROM ERA.—Inter-Idanto, Oct. 12: One of the minrer who came yeaterday trom Era reports the deciding out of the minrer with the exception that they have been of the minrer who came yeaterday to dispense they of the minrer with the exception that they have been of of the minrer who came year of the minrer with the exception that they have been of the tent all they have been of the fortiest in they are times to day or so, The Last poor in the came of the tent allies. Work is proceeding on min. Some big strikes in galance and some so in the proving to be a fine minre. Work is proceeding on min. Some big strikes in galance and some con the proving to be a fine minrer and some con the creek. Considerable work has been done on the some of the min. The cluster minrer man the came company, is being up and the strike in the save been minrer flores. The Continental, one mile from the Custer minrer which the same company, is being up to of the mill. The Custer mill handles of the company, is being up to of the mill. The Custer mill handles are funning. The continent is being the of the forth of the custer minrer which the same company, is being opened to subth the same company, is being decided to concentrated, its found to yield all the way from subth the same to the forth of the concentrated, its form do not all the forth of the found to yield all the way from yorking the ore without note of the mill, recently state the conditions, above at the follow of the mile same with the very little noise is meeting the ore. Meeting the transpendent of the very little noise is made, but which may between the Mount of the very little noise is made, but which are strike the minrer and the very little noise is made, but which the same in the same of the mountains the same of the minrer and with the very little noise is made, but the same in the same of the man are slited by the same of the mill and the

which have been turnite interests are problem, which is a decessity in encessity in the bauled to the bauled to be bauled to be bauled to be to be bauled to be come of the such as a boundare of the such as a such moving along smoothly and the usual amount of ore in city of the control of the c

GRANITE.—Phillipsburg Mail, Oct. 15: Theout-put for last week was 38 bars, containing 62,650 ozs. fine silver, and 32,634 ozs fine gold, Everything moving slong smoothly and the usual amount of ore is being Loisted.

ELKHORN DISTRICT.—Butte Miner, Oct. 8: Bentangen district will "get there" with the test.

The particle much possecting in that vicinity. They say in the test in the particle much possecting in that vicinity. They say in the cost one. Mesers, Howe and lease of the particle much possecting in that vicinity. They say may be and lease of the work end lease they will have quarters will stake them and they will have much be been good on the constructing the sand soo ounces in silver. A party trouble holding their oscillations, the constructing the carn-power. The Mountain View and in the carner of the works. The Mountain View and in the carner of the works and state of the works. The Mountain View and the carner of the work and the works and the works. The Mountain View and the works are among to constructing the metangenth of the works and the works. The Mountain View and the works are almost completed in the works and the works. The Mountain View and the works are almost completed in the works and the works. The Mountain View and the works and the Chance of the works and the Chance of the work and the works and the Chance of the work and the works and the Chance of the work and the considerable temporary repairing is being down too the considerable temporary repairing is being the sacronary repairing in the works and the Chance of the work and the chance of the work and the considerable of the Mountain View. All the samelers in the works and the Chance of the work and the chance of the work and the considerable of the work and the work and the Mountain View. All the samelers in the works and Conditioned Chances the work and the

IDAHO.

depth of several hundred feet.

NOTES.— Georgetown Courrey, Oct. 13: Centennial pain pain and the control of th

be Tucson sampler last week, which released him to be placer bistory of Cœur d'Alene.

The Johasew meles at Manner of the Manner

### .HATU

SUCKER CREEK.—Recent developments on SuckSUCKER CREEK.—Recent developments on Sucker creek have excited the interest of placer miners
and a considerable influx has taken place to that
wichinty. Word recently received from there is to
the effect that the whole creek has been located
them in source to the mouth. Simmons & Co. of
Waldo are making great preparations for opening
them mines. Their cut for tail race is nearly fineished. This was a great undertaking, being a mile
long and 60 to 90 feet deep throughout, and in some
places is ten rods wide at the top.

of mineral.

THE LAURA MAY.—J. B. Hutch of the Commercial hotel has struck it rich. In fact, competent cast hotel has struck it rich. In fact, competent judges affirm that in the Laura May, his recently operac gold mine at Gold Hilli, he has struck the been workent in Oregon. Two men have been workent in Oregon. Two men have been workenty the ledge all summer for him. A shaft was first cast downward. A tunnel was then run from the bottom of the shaft over 30 feet, when the ledge was struck three feet in width. Cateful assays put the abute of the rock at \$1000 per ton.

JOSEPHINE COUNTY MINES. — Rogue River Courter, Oct. 23: Mr. Pontetoy of Gold Hill is shipping roo tons of his high-grade iron ore to Port. aland for experimental working there, it is what is called magnetic iron ore and carries over 45 per cent of mineral.

PINOS ALTOS.— Southnost Sentined, Oct. III.
PINOS ALTOS.— Southnost Sentined, Oct. III.
Pinos Altos Is, just now, the most serive mining camp in this vicienty, and it has brighter prospects before it his man of hoter camp in the county. It has before it his any other camp in the county. It has before it his man other base since turned out well, were abond to response the camp lively. Were it in the kingston district, from Boyd and has sentence the county of the per certain the camp will be chore there before the camp lively. R. H. Hopper and Wm. Revers have bought the Pride of the county of the camp lively. R. H. Hopper and Wm. Revers have bought the Pride of the county of the camp lively. R. H. Hopper and Wm. Revers have bought the Pride of Garvey, on a bond for \$50,000. Ten per cent was baid on the camp lively. R. H. Hopper and Wm. Revers have bought the Pride of the work in the kingston district, from Boyd and the part of the formal of the county of the per cent was baid on the camp lively. R. H. Hopper and Wm. Revers have bought the pride of Garvey, on a bond for \$5,000. Ten per cent was baid of the county of the per cent was baid of the county of the per cent was baid of the county of the prince of the Mounting of the Mounting of the formal of the cast of the Mounting of the formation of the cast of next month. The manager of the Mounting the sale was the company upon the cast of next month. The Mounting the sale was the company upon a sink as only as on this cast winds, and the rat of next month. The Mounting the sale was the company upon as learn that the cumpany the space to the Mounting the the per company upon the sale of one; some of which is all know of was bond to re. The South Homestake Minning sain Key is not not one. The Bouland South Minde as a sink as older and the rat of next month. The manager of the Mounting the sale was more than snother to one; one of which as a sink and the rat of next month. We sloon on as it is needed. The mill mill be bedone to mild a tank which as a south of the cast

the full weight of silver egreed upon, and are tested be fore leaving our works, thereby avoiding the complaints about light weight, made so often before we started NOTICE.-All our plates are guaranteed to have

JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

Agent for HOSKINS' BATTERY SCREEUS AND WIKE CLOTH

HYDRO-CARBON ASSAY FURNACES

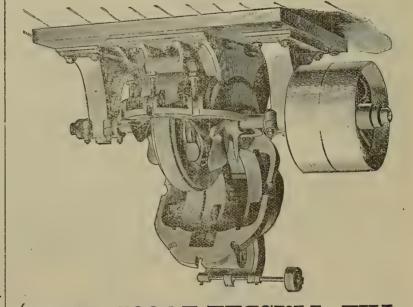
NOTICE TO GOL

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. IN QUARTZ, GRAVEL, OR PLACER MINES. MADE OF BEST SOFT LAKE SUPERIOR COPPER

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

FRANCISCO NOVELTY AND PLATING WORKS

DONBLE "ECONOMIC" STAMP MILL



ness in a rapid and economical manner. other Mineral Substance to any degree of fine-Reduction of Ores, Quartz, Phosphate Rock, Carbon, or

Any method of smalgamation may be applied.
At 300 revolutions per minute will pulverize 2000 pounds of quartz per hour to 60 mesh

dry, and from 3000 to 6000 pounds wet.
All wearing parts easily and cheaply replaced. May be seen in operation at the New York Mealingsparts easily and cheaply replaced. May be seen in operation at the New York Mealingsparts easily and cheaply replaced.

Certificates as to performance of the Mills, and any information required, furnished on application.

Office, 145 Broadway, cor. Liberty St., NEM LOKE THE FRISBEE-LUCOP MILL CO.

### **LOB WINES** ENCINE HOISTING

Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link

LIDGERWOOD M'F'G COMPANY

96 Liberty St., Mew York.

PACIFIC COAST AGENTS,

THE GIANT POWDER COMPANY

The Satest and Strongest High Explosives in the Market.

Of Different Strengths as Required. GIVAL BOWDER OF DYNAMITE,

10DSON POWDER IMPROVED. GELATINE-DYNAMITE, Stronger than Dynamite and even Saler in Ha MORET. REXECUTATE CETVAINE, MUOD CONCERNS 34 DOL COUR OF MIETO-CHACCALUC, and

BYNDWYNN' NIETZEN & CO'

And General Mining Machinery ROCK DRILLS,

THE RUSSELL PROCESS COMP'Y. Machinery, Models and Buildings

Mechanical Photographers,

RUNNELS & STATELER,

San Francisco

SAN FRANCISCO, CAL.

**FEEDER** 

957 Market St.,

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc.

TATUM & BOWEN

Several Mills are now in the mines doing excellent work. The "Economic" is not only a mill for small mines, but we believe it is destined to supersede the old stand in mills of the languagest capacity.

Goes with each Mill. We also have a suitable

We have here the Stamp Mill in a cheap and simple form. The high diop of the old stamp is more than compensated for by the great weight (1200 lbs, each) of our stamps, and the repidity (300 strokes each per minute) which which they run. There are 4500 strokes of the aboes on the dies per minute. Less power is required than in that there are 4500 strokes of the annount of work.

The Mortar has screens at both ends, giving ample discharge. There are no cams or tapped to wear or be adjusted. The stamps adjust themselves as the shoes wear.

AUTOMATIC ORE

Breaker.

NEW YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President.

South 10th St., Philadelphia. Branch Officer of July Mow York, and 40 La Sall. St., Dhicago. Agent for the Pacific Rest. St., Sheep H. Dorety, 529 Commercial St., St. TITTED BY URBRIDE EINER JOHNSON & UO. This paper is printed with ink Manuf

AND MAILED FREE ON APPLICATION,

STEAM PUMPS, STEAM ENGINES,

**WECHINE MOBKS** 

thomson & evans), EVANS

ROOK

34 and 36 FREMONT STREET,

NZI IZZNEDI

Vatalogue No.5, Jan I, 1887

AIR COMPRESSORS,

Office, 43 DEY ST, NEW YORK Clayten Air Compressor Werks For CATALOGUES, ESTIMATES, Etc.,

OAPS and FUSE for Sale,

GENERAL AGENTS, SAN FRANCISCO OAL.

This Mill as a Crueher and Pul-

TURTEVANT MILL.

ORNIZH

**ENCINES** 

UMPING

MACHINERY,

## Metallurgy and Ores.

### SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, **GOLD AND SILVER REFINERY** 

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

ENGINES, BLUESTONE, "WANDPARTERS OF....

LEAD PIPE, LEAD,

SHOT, Elc., Etc.

Under Chamberlin Patent. Standard Shot-Gun Gartridges,

JOHN TAYLOR & CO.,

ASSAYERS' MATERIALS, MINE

CHEMICAL APPARATE AND SUNDRIES, ETC. AND MILL SUPPLIES,

II4-II8 Fine Street, - San Francisco.

We would call the attention of Assayors, Obmists,
Mining Companies, Milling Companies, Prospectors, ster,
to our tull stock of Belances, Furnaces, Muffine, Crucito our tull stock of Belances, Furnaces, Muffine, Crucices, Scordiners, etc., Including, also, a full stock of
Choulcale.

ation.
Our Gold and Silver Tables, showing the value per Our Gold and Silver Tables, showing the degrees of finoness, and valuable to computation of assays in grains and grammers sent the upon application. Agents for the lates of this of this well-known manufacturer are thoroughly in well-known manufacturer are thoroughly in the well-known manufacturer are thoroughly as in the well-known manufacturer are thoroughly as in the well-known manufacturer are thoroughly as in the property of the well-known manufacturer are thoroughly as the property of the well-known manufacturer and well-known manufacturer are the property of the well-known manufacturer and well-known manufacturer are thoroughly as the well-known manufacturer are the well-known manufacturer and well-known manufacturer are the well-known manufactu

Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

Ores worked by any Process, С. А. Глокнавт, Мапакот.

Ores Sampled,

Assying in all its Branches. Analyses of Ores, Minerals, Waters, etc.

Working Tests (practical) Made. Plans and Specifications furnished for the nost suitable Process for Working Ores.

Mines; Plans and Reports furnished.

O. A. LUCKHARDT & CO.,
(Formerly Huhn & Luckhardt,) Special attention paid to Examinations

Mining Engineers and Metallurgists.

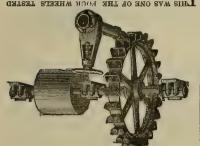
METALLURGICAL 218 Pine St. (Basement,

Corner of Leidesdorff Street, . SAN FRANCISCO

Assaying and Analysis of Ores, Minerals and Watere,
Mines Examined and Reported on.
Practical Instruction given Treating Ores by im
oved proceeses.

G. KUSTEL & CO., Engineers and Metallurgist

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED Arough 30 to 100 to

L. A. PELTON, Nevede City, Cal. Acerra—PARKE & LACY, 21 and 28 Fremont Street an Francisco, Cal.

INVENTORS, TAKE NOTICE!

858 Market St., N. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin L. PETERSON, MODEL MAKER,

> QUARTZ MILL, Hantington Centrifugal

A SEND FOR CATALOGUE TO

HOISTING

CORNISH ROLLS,

lics and TROMMELS.

FRASER & CHALMERS,

ENGINES AND BOILERS.

verizer is without rival.

Le in operation in lead-

NACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

HALLIDIE'S

GENERAL OFFICE AND WORKS:

Fulton and Union Streets, Obicago, III. 'Samna

UTAH OFFICK-SALT LAKE CITY, UTAH. NEW YORK OFFICE:

BOOM 43, No. 2 Wall Street.

## Mining Turbine Water Wheel. STHARE PERFELS

MEXICO OFFICE: No. 11 Oalle de Juarez, Ohlhuahua, Mexico.

DENVER OFFICE:
No. 248 Eighteenth Street, Denver, Colorado.

JAMES LEFFEL & CO.,

or 110 Liberty St., Mew York.

TRAMWAYS,

MIKE KOBE

Springfield, Ohio,

FRASER & CHALMERS, General Agents, Chicago, III., and Denver, Col

PARKE & LACY, General Agents, San Francisco, Cal.

COLD MINERS

Quartz, Gravel and Placer Mines!

**SMITAMASJAMA** Silver-Plated PLATES

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

663 and 655 MISSION ST, SAN FRANCISCO, CAL. D. G. DEUNISTON, Proprietor.

everywhere. They have proved superior to all others [in durability NOTICE,-My Silver-Plated Plates are well known and used

THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

ROPPION ROOMS SUG ORE LPOOKS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder, Ores Received on Consignment, Sampled, Assayed, and Disposed



IAS. & WM. MONTGOMERY, Prop'ra.

### MINING SHYREHOLDERS' DIRECTORY,

COMPLED EVERY THURSDAY PROM ADVERTISEMENTS IN MINING AND SOIENTIPIO PRESS AND OTHER S. F. JUDRALIS.

7 300	02	tery St	noginoM 908.	визуан W	AsbaveM	Con California & Va M Co
PAYABLE	AMOUNT.	IN S. E.	OLLIOR	SECRETARY.	LOCATION.	MAME OF COMPANY.
	.S.B	EE MONT	HIN THE	DENDS-MI	ATEST DIVI	I
	lsunaa.A	St	moganoM e &.	C Bates	UsmozirA	Contention Con M Co
12 45O	Special	38 TT9.	mogtnoM eve.	E Elliot	OsbavaM	Alpha Con M Co
DATF.	MEETING	IN S. E.	OFFICE	SECRETARY.	LOCATION.	MAME OF COMPANY,
		٠.	BE HET	EELINGS LC	TVI.	
TORE COMETY St	£ 829	sa''r, re remuke	4500t 46	O8 Jaskku	6a tomaso0	Yosemite Queen S & L M C
Ton. Romery St.	a · 88 m	i5 A Waterma	AONT GZ 4	2002 Jgebt02		Weldon M . o
18 gramoganol	AT 90%	.V&U.O M C 08	T. NOV.	05 Sept 27 No	California 4	Virginia Creek Hyd M Co
12 sigrornia St	£4	10A Berry	39d 3I v	240 t 6No	California 2	True Con M Co
B BiurolilaD 6	308	ailtua M. C. 18	30,d	10. Aug 29. Oct	Nevada 2	South Comstock Con M Co
toutgomery St.	A	la, G R Spinne	D.G. II	10,.Oct 7No		Seerpion S M Co
Jourgoniery St	V 605	31E B Holms		OO02 4qe802	69 ahayaM	Peerless M Co
48 ainfoinia St	TE san	21 G D Edwar 18 A Waterma		1.873 gu.A62	AUGSIA	Overman S M Co
Leiuesdorff St.	611	isg P Holder		O 72 Just. dl	1 8DSV8VL	Worth Bonanza M Co
tontscomery St	V 828	.orsigo M C SS	VOVI V	OM 72 Jq92 62	Sc sintoina.	Mayflower Gravel M Co
Honegomery St	£ 622suc	M. G. W Sessio	VOV UZ 3:	O 61 Just 1006	Salifornia, 24.,	Mono M Co
38 Buil TSE		24., J Crockett	300 · · · · · 9 4	50. Sept 1., Oc	S BROSITA	LOCOMOTIVE M CO
tontgomery 8t		(awdeW T, .e.		10., Sept 15., Oc	6sin tolilsD.	Live Oak Drift Gravel M Co
48 signoins St	( <del>p</del>	27, R E Kelley	45U8 4	30S dqa808	Nevada45	Justice M Co
TO DELL CONTROL	AL E23	8. W B Lake.		O &I vist 80	CoCal 4	Cataract & Wide West G M
38 oniq 626		27 C L McCoy 8., F E Luty		So. 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	esimolifaC.	
Toptgumery Bt		**, 19X19 W T . 12		OO . 3% 201A UE	,, AS & BRYS M	Champion M Co
327 Pine 86	W 003	7J Crockett.		O 61 Just 16 06	te. surveyilel	Belcher M Co
ton gomery St	£ 605	. modeO J es	33006 30	50. Ang 25. Se		Best & Belcher M Co
ton) gomery St	IT BOC BIT	ZI. G W Sessio		50 Aug 12 Se	) Binioinis.	Bouie Con M Co
de gramoginol	AL 608	52" OE EINOCH		50. Aug 24., Od	Nevada 22	Alpha Con M Co
E OF BUSINES	TARY, PLACE	TE' SECRE	ETING, NI' BY	AM'T, LEVIED, D	LOCATION. NO. A	COMPANY, "
			ENTS.	VSSESSV		

## Table of Lowest and Highest Sales in S. F. Stock Exchange.

				andandanah
				olmes
"F GO"F		3.50 4.25		sle & Moroross
19 96' E	4.20 6 00	3.45 5.00	3.05 3 30	ould & Curry
1 9t'1	IOT I			OZUA DUS
3,f 35, I	SP'I GS'I	02.1 02.1	31,1 30,1	
0.7 06.8				
1. 60.1 3.f 68.1 3.f 68.1				
		08, 67,	07, 09,	rocker,
7T 78			32.9 37.8	rown Point
	196	120		
8. 98.	0d. dt.			
0,2	1.3 0 08 1	8.1		
0.3	06.8 62.8		62.8 6.25	········· eouepyuc
\$G \$G	83 06.4	37.8 09.8	08.8 08.8	rallor
	4			
8,35 8,4		ud, 2 de, I		рвисоко
11 F9T	8I 9I		ggt gpt	ulwer. Va. & Cal
I I 38.	06, 08.	96' 06	00.1 88.	ulwer
				real and a series of the contract of the contr
T. P 62. P		3.00 4.45	00.2	·······················uo1ue
7.2 30,5	38.1 39.1	00.1 07.1		Gon Gibo
0 1 37.	04. 69.	08. 87.	87, 08.	
E.I 01.1	1.(0 1.15	OT T 06.	96" 06"	eltimore
0.8 87.1		1,65 2.0.		
14 . 199	00.7 48	₹4 04'¥	34.45 07.85	Belcher
4		GP, OP,		корру
8,25 11	92.6 58		7F F OT F	elcher
6			32, SI.	rgentagrapyr
	1.25 1.45	1.2C 1.5u	31.1 GO.1	ndes
6.8 3.3		08.2 00.3	00.2 68.1	aJ
0,8 62.8	29 00 9	62.8 00.4	3,52 3,60	
Oct. 20.	Oct. 13.	Oct. 6.	Sept. 29.	COMPANY.
Еирии	ENDING	ENDING	ENDING	
WEEK	WEEE	WEEK	WEEK	MAME OF
		1		

## .8 87.4 68.4 04.4 87.4 68.4 04.4 62.4 Ways Belle Isle 1 03.1 01.1 62.1 01.1 62.1 81.1 1 03.6 62.6 00.6 62.6 67.8 88 03.7 Julia.... Lactice..... Kentuck,.... Martin White, Mono... 87. 88. 87. 08. 88. 88. 08.

## JY. 00, 80, 88, 88, 88, 08, . \$2, 84,4 00,4 00,4 04,8 04,8 04,8 10,8 25, 04, 04, 04, 08, 62,

47 82.8 47 82.8 87.8 \$6.8

### WHOLESALE. THURSDAY, Oct. 20, 1887. San Francisco Metal Market.

		80	00			٠.	10	. 1		20		O.	4.5	10	ы	0		0		100	2.0	Œ	۰	0.1		91	• •			T	TO	3	я	×	218	KJ		п
	2	- 8	98	_	и	×		ķ.		a.			×		H				21		ă.	6.1																н
		<b>@</b>	90	u	×																									m,	91	٩.	0	4	50	FI	2	н
		(D)	00	OF		• •	•	**	۳	۰	• •	•	**	ч	۳	٠	۳	۳	-4	8	В	IJ	9	ų	3	Δ	ਝ	-	-23	ĸ	Δ	T	Ę	32	Ю	10	o	н
		1 (0)	94		٠	•	٠.	9		٠			٠	Ŧ		э		п	9	• •	۰	•	٠.	٠	•	•		•	• 1		п	8	Di	L	81	10		н
		4 0	00	0,0				• •		4		۰	•	в	٠	2		٠	٠.			x	•	•	۰	٠,	a	ЯC	20	١.	_	n.	K	77	Γď	N	KT.	н
		3 6	00	Ħ		м	٠.	ı				٠.	ĸ.			a	٠.	ä										N.	ò	'n	₹	0	11	1	67	N	-	1
		9	10		ü	i.									ı	ų,		٠			ŧ.	Ţ		н	Ţ	н		٠.	ŭ	S	튽			2	240	IN		1
		(Q)	10																													ar.				W		1
		(0)	ŧÐ.																								•					***				ıa		i
		<u>a</u>	10		*		۰	•	20	•	• •	۰	•	۰	* 5	36	$\mathbf{z}$	D	В,	£ι	Œ	U	II	D.	X(	3	'nρ	п	0	ш	B	G	ı	¥	38	BJ		t
		(m)	91							ĸ.				٠		7	×	:			٠.		ç			πì	-	TI S	gi	12	ì	n	4	_r	fa	E	2.1	t
		8		_					×			×								٠						40	٠.	9		5	n	1	'n	ST.	17.3	GF		н
		2	02	8																																		ŧ
		(9)	00	3																																ıg		1
		20)	08	Ŧ	-2	i e	ΙŪ	K	£.	46	ĭc	),I	a	1			8	B	q.	0	n		u	0	7	:0	τ	45	μ	ю	n	ВĚ	р	13	O	418		Ł
		<b>a</b>	8	н		• •		ò		٠	• 1	•	b		0			٠	•	ŭ	ď	8			•	•	• •		• •	9	• •	* *	1	36	ə	48 48		н
		4 5	09	g						٠			٠			٠				٠.	٠	ō,	٠.				•		. :				٠,	٠	19	BB		ŧ
		3 5				٠.				,	٠.														×	٠					- 2	τ.	r-		ď	V3	T	1
		9	00	9										۰											Ų.						Į,		'n	20	0	70	*	1
		<b>@</b>	90	35																								ц	3	u	Ŋ		В	ŭ	-	98		1
		<b>Ø</b>	90	27	, 1	•	۳	*	*	۰	•••	•	•	•	۰	4	ľ	۰	*	*	٦	Ť	۳	۰	۰	9	3į	Ч.	Μ	Ž.	91	1.8	ч	g,		CJ		н
		-(0)	20	25		***		***	• •	٠	• •	•	٠	•	•	٠	ľ	•	•	٠.	٠	•	• •	*	•	• •	u	01	ж	וַנ	d	E	a(	)2	10,	10		П
	ı.	cc 20	-	1	٠		٠	• •	• •	٠	•	•	۰			۰	•		u	0	2	В	т	*(	) ]	T	99	K	09	7	u	8:	IT.	15	TE	A		н
	U	07 20	-		٠				٠.						٠	٠		٠			ž.	×	i.	٠		a		T	ıċ	ท่า	41	70	'n	п	tt2	Ė		П
	!	96																																		0		н
	)	(0.30)																																			-1	ı
	1	(0)	_6T																							ĸ	4,4	de	J.	15	E		ä	4	d'A	Ŀ		Į.
и	1	(D)	17.1																																	αI		п
и		മ	6I		1	•	9	•	в	•	٠.	۰		9	۰	×	•	•	• •	۰	4	•	۰	٠	•	•	• •	•	• •	В	21	ц	ų:	ì	ıəı	qs		н
	,	200	e.F																							٠		• •	• •	۰	• •	•		9	110	B		н
	,	•	OF																																	ac	0	П
		-																													pq	O.	Re	21	17.1	A	2	1
A		Q)	ä							u																											~	1
п		<b>(D)</b>	24		М	۰	ч	'n	۲	м	•	u	м	ì	×	٩	ì	ı			o	u	Н	51	٤	u	16	8	9	u	R		ij	8.	A 5	10	a	П
																								ŧ														

### Complimentary Samples.

Persons receiving this paper marked are queeted to examine its contents, terms of surption, and give it their own patronage, as at as practicable, aid in circulating it united wide known to others, and extending its influence the cause it faithfully serves. Subscript rate, \$3 a year. Extra copies mailed for cent, if ordered soon enough, if alread on the paper to others, if ordered soon enough. If alread enberther, please show the paper to others,

## New Incorporations. " San W ' a fain olida" O O M Sersid sull as a columbrate of the c

The following companies have been incorporations,

The following companies have been incorporated, and papers filed in the office of the Superior Court, Department 10, San Francisco: Courmers Box Co., Oct., 15th. Object, to deal in and manufacture borze, in the State of Nevada. Campus Campion and F. G. H. Day, E. Lande, B. W. Campion and F. G. H. Day, E. Lande, B. W. Campion and F. G. H. Day, E. Lande, B. W. Western Beet Stoke, M. P. Jones, J. L. B. Steteon, Louis Sloss, M. P. Jones, J. L. Lone, J. L. Lone, J. L. Louis Sloss, M. P. Jones, J. L. Lone, J. L. Louis Spreckels.

Western Beet Stoke, M. Ehrman and Claus Spreckels.

Wester, boulid, own and operate railroads, vegon, turnpike and other roads, bridges, ferveson, turnpike and other roads, bridges, ferves, periods, prince, semboats, vegon, turnpike and other mades, bridges, ferves, the prince of the search of the contract of the form and town lots and improve them, and town lots and improve them, and town lots and improve them, and to buy and town lots and improve them, and to buy and some last sets, mineral and timber lands, and town lots and improve them, and to buy and some last sets and improve them, and to buy and some last sets and set in the serves.

Thomas W. Nowlin and Aylett R. Cotton.

Thomas W. Nowlin and Aylett R. Cotton.

Thomas W. Mowlin and Aylett R. Cotton.

Stokelley, J. C. Bollinger, H. L. Garfield and the sorty Raymond.

Henry Raymond.

Henry Raymond.

### MIDDE SUSTE MATERIC.

Mining stocks have been much livelier this week than lately. Howe received from Crown Point and Beloher, and from the upraise on the said the ore showes great improvement, tended so to Segregated Beloher, where it is said the ore showes great improvement, tended so the sworthes, and large to showes great improvement, tended to make these mines the sworthes, and the Tuescaro any importance was received from the Tuescaro ras, but everything was reported as looking ras, but everything has week 1062 tones to ore were shipped to the Morgan mill, and 190 tones to the California in a mill. The control and 190 tones to the California mill. The avorage assay value of all the ore worked at both the above mills during the nor worked at both the above mills during the Bulled avorage assay value of all the proposed to the control of the California or or the control of the California or or the said \$43,000 tone to the California or or the said of the shower said the control of the control of the control of all the said of the control of th

### New York Metal Market.

Telegraphic advices dated Oct. 20th give the following ew York prices:

Bar Silver—95% per oz.

Boar—120. 1, 822 001.00.

Boar—70. 1, 822 001.00.

Boar—80. 1, 822 00.00.

Boar—80. 1, 822 00.00.

Boar—80. 1, 822 00.00.

Boar—94.60% 10.

Lake—\$46.064.10.

Lake—\$46.064.10.

Quickellver—\$28.064.0.

The following is the latest by mail from the "Mew York Metal Exchenge Market Report".

Vorbe Mortices (Lake) issued at \$10.560.10.

Lake Seedy at \$4.40.00.

Lake Seedy at \$4.40.00.

This—Steady at \$23.00.00.35.25.

Transferable notices is
sued at \$35.10.

Sued Seedy at \$2.00.00.

Murer's and seed seed with the property along the late the R. Y. Exchange, oovering extremes of the late the R. Y. Exchange, oovering extremes of the late the R. Y. Exchange, oovering extremes of the late the R. Y. Exchange of t

### OUT ARBITIS.

Our Frixups can do much in aid of our paper and the same of practical knowledge and science, by assisting typerie in their labors of carvassing, by lending their intence and encounseing favors. We intend to send none ut worthy men.

La Worldon Late...
JARRD C. W. INGALLS...
G. W. INGALLS...
G. W. INGALLS...
A. IERRANA...
M. J. ERRENAN...
J. ERRENAN...
E. G. HUSTON...
E. G. HUSTON...
E. P. SHITEL STORE COUNDER.
E. P. SHITEL STORE COUNDER.
C. M. HUSTON...
FALLER COLLEGE COSTS CO...
WM. WILLEINSON...
COLLEGE COSTS CO...

WH. WILLEINSON...
FOR THE COSTS CO...

WH. WILLEINSON...
FOR THE COSTS CO...

The Contract Contract Contract Contract Contract Costs Co...

The Contract Contract Contract Contract Costs Co...

The Contract Contrac

Inventors, List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific States.

From the official report of U.S. Patents in Dawar & C.O. Bratent Office Library, 220 Market St., S. F.

TOR THE WEEK ENDING OCTOBER II, 1887, S71,411.—BLAST GOVERNOR FOR ÜRAIN CLEAN-S77,420.—LATCH—W. B. Cantrell, Portland, In.

PRINGER STREET ON THE CUIVER, S. F. 371,489.—CALIPEES—Jas. H. Cuiver, S. F. 371,538.—FRANE FOR READING AND MUNBER 371,538.—France L. Matson, San Jose, Cal. 371,488.—CARPET WEAVER—Mary A. McMassf. Anioch. Cal.

T, Actioch, Cal.

37, 246.—Challe Gripe. B. R. Peyton, S. F.
37, 256.—Erectro Therapeutic Belt—W.
37, 256.—Challe Gripe. Gripe. B. F.
37, 256.—Challe Gripe. Gripe. Gripe. Gripe. B. F.

Over—Copies of U. S. and Foreign patents turnlahed by Oraw—Copies of U. S. and Foreign patents of the possible (by mail potential foreign patents of telegraphic order). American and foreign patents are foreign patents of Patents, at reasonable involver transacted with portice security, at reasonable involver transacted with patents are security.

### Notices of Recent Patents.

Foreign Patent Agency, the following are Among the patents recently obtained through Dewey & Co.'s Scientific Press U. S. and

S. F., No. 371,364. Dated Oct. 11, 1887, The cable to be used in connection with this grip has enlargements at regular intervals along its length. The grip, by its mechanism, is opened or closed, and when closed one of the enlargements comes in contact with the gripping mechanism, an air cylinder with a piston, and the air is gradually comvent a piston, and the call the gripping mechanism, an air cylinder with a piston, and the call the gripping mechanism, an air cylinder with a piston, and the call the gripping mechanism, an air cylinder compact with the enlargement on the cable.

Contracts.—James H. Culver, S. F. No.

Collyer, S. F. No.

371,489, Dated Oct. 11, 1887, This invention S. F. No. 371,364, Dated Oct. 11, 1867. worthy of special mention:

Cable-Railway Grip.—George Rischmuller,

771,489. Dated Oot. II, 1887, This invention relabes to certain improvements in calipers for talkers for exterior and exterior dimensions. It consists of a jointed leg upon one side, which allows the leg to be opened or closed, indecemently of the ordinary fulcrum-joint, and a stop and holding serew by which it may be returned to exactly the same point and locked. Inside measurements can also be taken, the legs of the calippers being covered so that the points project in poposite directions. The device is quite simple and by its peculiar construction it is possible to take and retain accurately the sizes of parts which could not otherwise be measured. Blass during could not otherwise be measured. 371,489. Dated Oct. 11, 1887. This invention

BLAST GOVERNOR FOR GRAIN-CLEAUERS.— Daniel Best, San Leandro, Cal. No. 371,411.

**Р**ЕАМЕ РОЕ ВЕАDING AND **М**ОМВЕЕ **С**А**R**DS. Daniel Best, San Leandro, Cal. No. 371,411.
Dated Oct. 11, 1887. This governor for the blast of grain-eleaners consists of vertically pivoted shutters extending across the air-inlet and obliquely projecting lugs, in combination with a uniting-bar pivoted to these lugs, so that frey may be opened or closed simulateously, the bar acting as a stop against the edges of the transverse bars in their open position. By the produced or closed simulated outlier, by the produced or closed simulated, will control produced, which, when adjusted, will control that the great adjusted, will control being blown over or lost.

Define blown over or lost.

Define but the perfectly elsaning-shoe so be sing blown over or lost.

being blown over or lest.

Frants Lu, Makson, San, Jose, No. 371, 385.

Dated Oct. II, 1887. This is a device which the inventor calls a 'reading language and number frame." It consists of jointed or inpeed standards with detached bases, having only not eside of the standards a board with detached bases, having poon one side of the standards a board with detached bases, having convenies for the reception of different positions. If the standards with detached of different positions. The standards with detached by the convenient of detached by the convenient of the standards with detached by the convenient of the standards and the standards and the standards of t

THE total receipts from the recent Fair of the Mechanics' Institute were, \$65,471, as against \$45,206 last year.

### The Fulton Iron Works Fire.

south by the large brick building of the Pioneer White Lead Works. The fire was prevented from spreading with a number of new cars, the tools, engines, Brass Works next door were damaged, and the car shope of John Hammond were consumed occurred on Fremont street, by which the shops of the Fulton foundry, with the tools, patterns, drawings, etc., were destroyed. The Eagle On Wednesday evening last a disastrous fire

shops were a number of engines, marine and stationary, quartz-mill and other machinery. site the main works, was untouched. The foundty and machine shops, draughting-room, molding-room, etc., were all destroyed. In the not damaged very much, and the office, oppo-The boiler shops of the Fulton works were

day since they occupied their present site. Of late years the facilities of the works have been and oldest establishments. It is 20 years to The Fulton Iron Works is one of our largest All this is ruined by the fire.

setimate the loss. tools, shafting, and machinery have been ruined by the fire. It is difficult at present writing to the same site, and work will commence at once in removing the debris. Most of the of the works, intend rebuilding immediately on very large business. Several bundred men were employed in the various departments. The firm of Hinekley, Spiers & Hayes, owners greatly enlarged, and they have been doing a

they have things in running order again. However, the owners are energetic, practical men, and it will be only a few weeks before The loss of patterns is a very severe one its exact cause has not yet been ascertained. gine-room, where petroleum is used as fuel, but The fire is said to have originated in the en-

### The Big Bend Tannel.

by June of next year, when active operations been mined. The tunnel will carry the water Some of the bars in the river have been once worked and paid well, but others have never been mixed. The transly will carry the water. sults obtained give hope of good returns. was prospected in several places, and the resesson to pursue active mining, but the bed channel was laid bare. It was too late in the turned through the enlarged tunnel the river we learn that the prospects in the river are very satisfactory. When the water of the river was which he is president and the largest owner, In conversation this week with Dr. Pierce of Buffalo, M. Y., who is now on this coast in the interest of the Big Bend Tunnel Company, of

of conductors to complete a return circuit. dynamos. They are figuring on some 18 miles end of the tunnel, and this will be utilized, by means of Pelton and Knight wheels, to run the drilling large rocks where necessary to blast. They have plenty of water power at the lower ing where necessary. It may also be used for removing boulders and rocks, and perhaps for Dr. Pierce is at present investigating the sub-ject of utilizing electricity for power for pumpwill be carried on in the exposed river-bed.

this city by Dr. Pierce. 1682 pounds to the mile. Several 40 or 50. horse power dynamos will be used. The details of this matter are now being investigated in power dynamo. They figure on Mo. O wire of the seepage water in the river-bed, to remove rocks, etc. The electrical engineer guarantees to deliver 108-horse power with a 160-horse power can be used on movable pumps to remove tunnel. The wires from the dynamos will be carried along in such a position that the electric about 350 feet head on the water. The canyon pitches off very rapidly below the outlet of the They will build some two miles of ditch from the lower end of the tunnel and will then have

### Bullion Shipments.

We quote shipments since our last, and shall

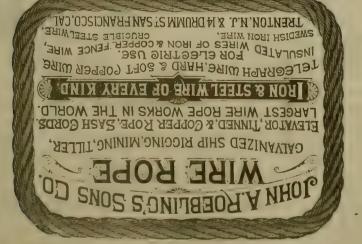
be pleased to receive further reports:

Moulton, Oct. 14, \$10,000; Bluebird, 12, \$16,Moulton, Oct. 14, \$10,000; Bluebird, 12, \$16,Moulton, Oct. 14, \$10,000; Bluebird, 12, \$1100;
\$16,160; M. & R. Co., 14, \$5994; Hanner, 12, \$1100;
\$2856; Bannock, 12, \$1300; Overland, 12, \$1100;
Hanner, 13, \$4700; Germania, 14, \$3362; Bannock, 16, \$1600; Hanner, 16, \$2600; Germania, 16, \$1605; Con. California and Virginia, 18, \$41,921.

A GEEMAN colony of 100 families is being located in Burney valley, Shasta county. A co-operative irrigation scheme is on foot, water to be taken from Hat creek,

outh Comstock Consolidated Silver Min-

DELINQUENT NOTIOE,



## ELECTRIC DEVELOPMENT COMPANY.

Electric Motors, Dynamos, Trancars, Elevators, Signals and all kinds of Electrical Systems for lighting and amission of power, either direct or with glorage Batteries, Incandescent & Arc Electric Lights.

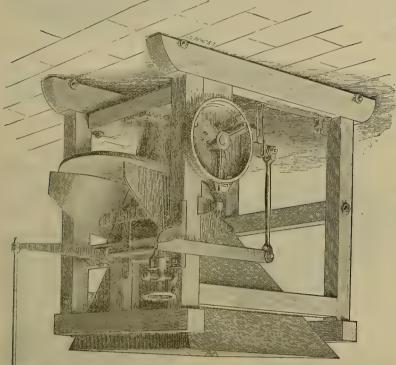
For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

## 102HOA HENDY MACHINE WORKS,

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



The est form of Feeder ever devised, and pronounced by reputable mining men to be far "OHALLENGE" IMPROVED ORE PREDER.

superior to any form of "Roller" Feeder manufactured. We refer to the following gentlemen who have furnished us with testimonial letters to the above effect, which can be seen at our office, viz.:

M. W. CROCKER, Supt. Bunker Hill Gold Min. D. G. Wickhan, Taylor Mine, Greenwood, Cal. ing Co., Amador City, Cal. W. C. Roberts, Greenwood, El Dorado Co., Cal. ing Co., Amador City, Cal. Mr. Trrectork, Supt. South Spring Gold Min. W. G. Roberts, Greenwood, El Dorado Co., Cal. ing Co., Amador City, Cal. Charles, and we are prepared to furnish either the "Structure of the Co., Cal. of the Cal. of the Co., Cal. of the Co., Cal. of the Cal. of t

And will furnish descriptive Catalogues and copies of Testimonial Letters, and will furnish descriptive quote prices upon application.



Practical Treatise on Hydraulic Mining.

THE ROLLER ORE FEEDER

Golden State and Miners' Iron Works.



### Ores, Mining, and Commission, HORACE D. RANLETT,

420 Modigomety 8t., S. F.
BUION COPPER MINE, Calaverse Co.,
NEWTON COPPER MINE, Calaverse Co.,
NEWTON COPPER MINE, Amador Co

Correspondent as Agent for Smelters in London, Liver to Yew York, Boston and Baltimore.

Special affection given to management and sales on the said purchase and shipment of copper produce. QUARTZ MINES FOR SALE.

Under good bonds, several first-chast Gold Quartz Mines eated in Amsoor county on the true lead; well de sloped and ready for millis. Samples and all particulars in the above.

**MINCHEZIER HONZE** 

This Fire-proof Brick Building is centrally to cated, in the tent block of, in the beat being being a ball block from the described part of the city, only a ball block from the described base of offices to all Steamboat Shilvad Offices.

Laundry Free for the use of Families Harrilies

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

J. POOLEY.

J. POOLEY.

ALIFORNIA VIGORIT POWDER CO.

No. 40 California Street, San Francisco,

Alifornia Inventors so obtains fatents a grant to a war it o a war it o a a war it o a a grant of a

on of their Respective Metals
By Gurdo Kustra, M. E. 1880. BY GUIDO KUSTEL, M. E.

Books on Working Ores.

## NILHO-CIACERINE

("DYNAMITE" or "GIANT")

Vigorit "LOW" Powder, Blasting Powders.

DE HENOVING STUNDS AND TREE
WORKS: California City, Marin Co., Cal.

TAS NO HQUAL.

HAS NATIN CO., Cal.

## Irop and Machine Works.

WM H. BIRCH & CO., CALIFORNIA MACHINE WORKS,

ENGINEERS AND MACHINISTS,

LIS Besle St., - San Francis

Bullos St., - San Francis

Steam Engines, Flour Mill,
Mining, Saw Mill and
Dredging Machin

Manulacturers of E. E. VATORS.
Manulacturers of E. E. Henrickson's Fatent Automatic for Elevators. All kinds of machiners age and repaired. (STORDERS SOLICITED.) Brodie Rock Crushers, crears Steam Power, Bydraulic, Side Walk and Hand-Power, Side Walk and Hand-Power

## **UNION IBON MORKS**

SAORAMENTO, CAL.

ROOT, NEILSON & OO.,

Engines, Boilers, Steam

Flouring Mills, Sav Mills and Quartz Mills Machinery constructed, fitted up and repaired. Front St., bet. N & O Sts., Sacramento, Osl. MACHINERY FOR MINING PURPOSES.

### Golden State & Miners Iron Works, Front St., bet. N & O Sts.,

Sacramento, Cal,

Marufacture Iron Castings and Machinery of all Kinde at Greatly Reduced Rates

SLEAEUSOU'S PATEUT

Golden State Pressure Blowers. Mold-Board AMALGAMATORS,

first St., between Howard & Folsom, Sts

THOMPSON BROTHERS,

ENKEKA FOUNDRY

мампрелогия от селтися от вунку ризоваттюм,

Works, Wo. 31b Mission 3t., San Francisco. no and Gas Engines. Correspondence solicited. TO OFFICE OF CENERAL WACHINER,

WAITHER OF CENERAL WACHINERY,

WANDE'RS OF CENERAL WACHINERY,

WANDE'RS No SE WINGER,

### MINING ENGINEERS

Civil and Mining Engineer, W. A. GOODYEAR,

Address "Business Box A," office of this paper, MINING EXPERT AND GEOLOGIST.

104,58 1885

Wainus H

### ROSS E BROMNE'

Mining and Hydraulic Engineer,

No. 307 Sausome St., Sau Francisco.

### SAW COMPANY N. W. SPAULDING

CHIZEL BIT Inserted Tooth SPAULDING'S

Saws. CIRCULAR

SAW MILLS AND MACHINERY
01 all kinds made to order. Send for Descriptive Cats.
17 and 19 Fremont St., San Francisco.

Outed by the Celebrated Dr. PIEROE'S PATENT MAGNETIC ELASTIC THUS CANDARD ONLY GENUINE EXIENCES WELL BOLLOKE

San Francisco Cordage Factory.

se kope, and so the made to order on short notice Extra sizes and lengths made to order on short notice Extra sizes and lengths made to order on short notice of the made of t Established 1856. setantly on hand a (ull assortment of Manila Rope, Rope, Tarred Manila Rope, Hay Rope, Whale

> SHIPPING AND COMMISSION MERCHANTS, NEWHALL

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Froducts. General Insurance Agents.

Have correspondents in all the chief cities of the United States, Europe, Australia, India, Ohina and the principal lates footiate. Furnasses goods and sell children by Podes conduction.

Part States of the Footiat. Part States of the United States Agents and the principal agents of the Footiat. Furnasses footis and sell children by Marian Agents.

General Agents for the Pacific Coast of WATIONAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass.

## PACIFIC ROLLING MILL

Cast Steel Castings and Steel Forgings

True to pattern and superior in strength, toughness and durability to Oast or Wrought Iron in any position or for any service. UP TO 20,000 LBS, WEIGHT,

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from \$ to 5 inch dismeter and Flats from I to 8 inch. Angles, Tees, Channels and other shapes steel Rods, from 12 to 4 pounds per yard. ALSO, Railroad and Merchiant Iron, Railroad and Merchiant Iron, Rolled Seams, Angle, Channel, and I ton, Bridge and Merchian Blags (angle of the Grants, Railroad, Railroad,

HIGHEST PRICE PAID FOR SCRAP IRON AND STREL.

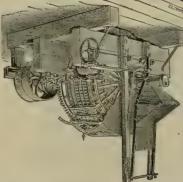
PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

### MOBKS IBON

HINOKLEY, SPIERS & HAYES, Proprietors.

San Francisco

Office, 220 Fremont St.,



### **ENGINES**BOITEBS TOSTINS PULVERIZER. MOBKS OBE MET 09 DEY.

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGENTS FOR THE PACIFIC COAST FOR THE ov Even Promptly attended to and at very mor

SPECIALTIES: Deane Steam Pump.

Corlies Engines and Tustin Ore Pulverizers. DEAUE STEAM PUMP. Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater.

IBON GEO. W. DICKIE, Manager J. O'B. GUNU, Secretary,

rasiravluq e'nitent Mill Machinery, Saw Mill Engines and Boilers, Dre Machinery, Powder Mill Machinery, Water Wheels.

MISCELLANEOUS MACHINERY.-Flour

MILL MACHINERY.—Batteries for Dry or Wet Crushing, Amalgamating Pans, Settl 1s, Furnaces, Other, Omeantrators, Ore Freders, Stock Breakers, Furnaces for Reducing Ores, Water Jackets, etc.

Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Com-

MINING MACHINERY.—Hoisting Engines and

--ио вивистовиям-

MARINE ENGINES AND BOILERS.

Propeller Engines, either High Pressure or Compound
Stern or Side-wheel Engines,

Ottice, 216 Market St., S. F.

GEO. W. PRESCOTT, President. IRVING M. SCOTT, Gen'l Manager.

Location of Works, Potrero. P. O. Box 2128,

Pump. Cameron Steam Agents of the STEAM, AIR, AND HYDRAULIC MACHINERY.

H. T. Scorr, Vice-Pres. and Treas.

HOME INDUSTRY. ALL WORE TESTED AND GUARANTEED.

SELF-FEEDERS, BART HOISTS, VENTILATING FANS, ROCK BREAKERS, SELF-FEEDERS,

CHEAPEST AND BEST IN USE.

SHAFTING, VERTICAL ENGINES, HORIZONTAL ENGINES, AUTOMATIC COT-OFF ENGINES, SHAFFING, SHAFFING,

NOINO TRY OUR MAKE.

30 to 40 Spear St.,

The Part of

Office, 40 Nevada Block, Dynamos and Motors of all sizes for Conveying Power from Waterfalls for use in Mines and Mills, erected under guaranty of performance.

Electric Reliways, and Apparatus for the Electric Transmission of Power.

Storage Batteries.

MOTORS, LAMPS

Keith's Electric Dynamos,

N'S' KEILH

221 & 223 First St., San Francisco, Cal

San Francisco Pioneer Screen Works,

Orders promptly attended to.

For Flour and Rice Mills, Grain Separators, Revolving and Sate Streems, Stamp Batteries and all those of Minimary. Iron, Steel, Copper, Brass, Ince and other media purched for all uses Invector and Maruntaeurer of the celebrated Slot Cut or burred and Slot Punched Sorcerse.

Inventor and Maruntaeurer of the celebrated Slot Cut Streems appearable, from No. 1 to 15 (Sne). Mining Screens a specialty, from No. 1 to 15 (Sne).

PERFORATED SHEET METAL

We imitection, no deception, no planished or rotten iron nsed. Only genuine fluesia iron in Quartz Sorcens. Planished iron servens as nearly helf my former rates. I have a large supply of Estrey Sorcens on hand suitable for the Huntington and all stamp Mills, which I suitable for the Huntington and all stamp Mills, which I suitable for the fluntington and all stamp Mills, which I land soll at 30 per cent discount.

st and Cheapest in America BATTERY SCREEUS

GREAT REDUCTION!

SAN FRANCISCO, CAL.

8 California St., and 21 Fremont St.

PARKE & LACY

INCERSOLL ROCK DRILL CO.

For Catalogues, Estimates, Etc. address

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIONS

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in

ENGINEERS' CONTRACTORS,

MINING MEN

NOTICE TO

THIRD EDITION NOW READY.

SEAT FREE ON APPLICATION

WATER TANKS, WINE TANKS!

CALIFORNIA WINE COOPERAGE CO.,

FULDA BROS., Proprietors, C Spear St., San Francisco.

ALL KINDS OF CASKS, TANKS, Etc., PAINING, and WATER TANKS, Ecc.

? po cents additional per volume.

BYCK First of the Miniso and Scientific pindstr (kov volumes) \$5. Inserted in Dewey's patent bindper volumes) \$5. Inserted in Dewey's patent bindin the minister of the Miniso and per volume.

COLLEGE, BUSINESS

SEND FOR LATE CIRCULARS,

Erc, Erc,

ETTLERS, STAMPS,

Successors to PRESCOIT, SCOIT & CO. IBON MOEKS'

SEND FOR LATE CIRCULARS.

SVN EBANCISCO' CAL.

(\$2\\\2'\) OO'\\2\\\\$ FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE NOW IN USE. Concentrations are clean from the frets each and the working. The west and

THE MONTANA COMPANY (Limited) The Montana Chimited in The Prof. Annors in a competitive chair with other similar maching the confidence of your Frue Annors in a competitive chair with other similar maching in the machine of the superiority of your Vannors, as is ovidenced by the fact of our having ordered from machines for immediate delivery. Yours truly,

Protected by prients May 4, 1965; December 22, 1874; September 2, 1879; April 27, 1886; March 22, 1881; Febru-ary 30, 1888; September 18, 1888. Patonta applied for: N. B.—Since the above was written the 20 Varuers having been started gave such satisfaction that 44 additional Frues and more stamps have been purchased,

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

Room 7, No. 109 California Street,



VANNING MACHINE, ORE CONCENTRATOR THE FRUE

## (COC'0995) FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the celebrated "Triumph" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the experior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their tranes being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are objust as compactly as their requisite strength will permit, weigh less, resteadiness of motion when operated. They are onstructed in the telegraph occurrence in the discharge transportation is reduced, and occupy less mill room when set up.

An important importeement has recently been introduced into their construction, which consists of a Airerle Thaire, eat notion which takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal information of the discharge from the feed and amalgam bowl. The improvement is in the reciprocal information of the discharge from the case in different mining districts and which takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal motion which is made in the recently been introduced into their ment of and which takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal motion in the land occupy less and many testimonials, from well-known Superintenates of mines in different mining districts of the United States, bearing evidence of the efficiency and appreciatly of this form of Concentrator, and we shall be pleased to send Circulars covering evidence of the efficiency and appreciatly of infections for setting up and operating freese for any considerable order.

Machine and are ready to quote special prices for any considerable order.

An interest of mines in different and occupies of the efficiency and upper order.

Machine and are ready to quote special prices for any considerable order.

San Francisco, Cal. Nos. 39 to 51 Fremont St., "TRIUMPH" ORE CONCENTRATOR DOZHOV HENDY MACHINE WORKS,

San Francisco, Cal.

ING CO',Z KUBBER GOODS. MEW YORK BELTING AND PACK-

KORTING INTECTORS AND ELEC-

NATHAN AND DREYFUS OILERS VAD NACHINERY,
TANITE CO.'S EMERY WHEELS

10DEON ENGINE CONERNOUS.

FICKERING ENGINE COVERNORS EMPIRE LAUDRY MACHINERY,

NONTAL ENGINES,

ATLAS FUGIUE WORKS ENGINES

ENGINES' HOIZLING

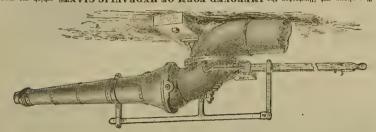
OLLO SITENT GAS ENGINES.

DISSTON'S CHCULAR SAWS.

INPORTERS AND DEALERS IN ALL CLA SES OF Cor. Fremont and Mission Sts.,

SOLE AGENTS FOR

HYDRAULIC FORM IMPROVED GIANTS. 0E



The above cut illustrates the INPROVED FORM OF HYDRAULIC GLANTS, which we need a Aliemiller styles are intringements of from this form, and a judgment styles are intringements form this form, and a judgment graphs and Fisher vs. E. Hoskin et ala, the decision of Judge Sawyer of the U.S. Circuit Court in the matter of Hendy and Fisher vs. E. Hoskin et ala, SP Paroza furnished upon application to

JOSHUA HENDY MACHINE WORKS, 89 to 51 Fremont St., San Francisco, Oal

FF Send for Descriptive Circulars containing Testionisis of well-known parties who are at present using

The most perfect appliance for people engaged in Smutling. Uny Cushing, Gusno Works, Dry Cushing, Gusno Works, Oguicksilver Mines, Lead Corroding, Threshwher and Bull of the Compatible of the Stock-Crivity, and all other compatible of the Stock-Crivity, the property of the Gustaff of the Stock-Crivity and similar on the chindled when they are worn, The Meanthers are sold subject for approval after trial, and if not aristic are to compatible, the chindled when they are worn, The Meanthers are sold subject for approval after trial, and if not aristic trial, which will be triangled on the subject of th

and Salivation.

Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR TNATAT

HOSKIN & CO., Marysville, Cal. sheed of two. It is do greezeer empetity and more assure vorteeu as in repair. The statement of all thendy that old this drives are included in repair. The statement of all thends to be utterly takes. A notice machines made by binn, he knows to printed are otherse, to distingt a consistency of angle statement of the decision of angle purposeded by our new style ows jointed. The decision of angle style feeting the decision of a reverse of the decision of a surface of the distinct of the decision of angle or surface and in surface or the decision of a reverse in our know. Miners and it is purchasers are not of the decision of a reverse the sole owners of the surface are decision of the decision MINITOWN: HYDBAULIC IWPROVED no sauesente ano saun.

> ne, paint, etc. TVNE VND BODEEK SVM MIETS

HOLLOWAY FIRE EXTINGUISH-BOHLENKER'S BOLT CUTTERS,
MASSEY'S STEAM HAMMERS,
BRADLEY CUSHIONED HAMMERS TURBINE WATER WHEELS. BRVINGED MIPPING MECHINES SHIMER MATCHER HEADS, STURTEVANT BLOWERS AND PERIN BAND SAW BLADES. WEBBER CENTRIFUGAL PUMPS.

BUNKES INPROVED STEAM

HEMENT & SON'S MACHINIST'S

CHINISTS, TOOLS, WA-NVCHINERA\*
LEVNE & CO'S MOODMOREINT

Wachinery, V. Fay & Co.'s woodworking

BICKLOUD'S POWER DRILLS.

YACHT ENGINES.

FROM 2 TO 100 H. P., ALWAYS IN STOCK

MILL SUPPLIES AND LUBRICATING OIFS

CHILLED MHEETS CAR

MEDAL AWARDED, MECHANICS, FAIR. AND RAILROAD CASTINGS.

DECIDENTAL FOUNDRY, 137 First 5t., San Francisco, Cal. TENERS 'N 'SVE

DEMEY & CO., [W. 260 MARKET ST.] PATENT AGENTS.

IRON CASTINGS of all descriptions.

PORTLAND, OREGON,

SAN FRANCISCO, CAL,

SALT LAKE CITY, UTAH,



Machinery

Mining Machinery, Steam Pumps, Wood and Iron Working NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS.

## **BOILER.** NOTJEZA

NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER, A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

Harmony Borax Mining Company, As H. P. Oakland Gas Light Co., Oakland.. 1 200 H. P. Alameda...

Chicago:

MINING WACHINERY,

RANKIN. BRAYTON &

San Francisco:

HEINE SAFETY

SIRED CAPACITY.

We are also propared to CONSTRUCT and DEThe But locality, MILLE, CONCENTRATION
We are also propared to CONSTRUCT and DEWe are also prop

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

ECONOWA' DURABILITY,

. 62,000 Ногее Роwer поw in use. AND FACILITY OF INSPECTION and REPAIRS,

San Francisco, Cal.

Guaranteed More Efficient than any other Boiler made. Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros, & Co., California Jute Mills, and other places.

SULLDERS OF

WITSON'S PATEUT GAS-PRODUCER, REFRICERATING MACHINERY for Steamships, Brewerles, and Cellars.

A Finite Company. Mill for the Alseka Mill and Mining Company; 60-stamp Mill for Quartz Mountain Mining Company. STEAMSHIPS—Steam Tachts, Marine Engines and Bollers, Screw Propellers, Centrilugal Fumps, Ste Fumps, Steam Capstans, Cargo Winches, etc. STEAM BOILERS of all descriptions.
SUGAR MACHINERY—Sugar Mills, Vacuum Pa

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces A all kinds.

AIR COMPRESSORS—Good bower of the Chinery.

MROUGHTIRON WATER PIPE a Specialty. More—Have just completed order for 35 miles of 44-inch part of the form of the Company, San Francisco.

WROUGHTIRON WATER PIPE a Specialty. More—Have just completed order for 35 miles of 44-inch part of the form of the form of the form of the form of the Company.

STEAM ENGINES—Corles Side-Valve, Poppet Valve Automatic, Single, and Compound.

SOLE MANUFACTURERS for Pacific Coast of the Celebrated "Heine" Patent Safety Boiler (Water Tube); 50,000 horse power now in use.

**MATER TUBE** 

03

Manufacturers and Sole Agents for the Pacific Coast for

60,000 holleve; will not break in transportation. MACBETIS PATENT STEEL-RIM PULLEYS—Filty per cent lighter and 25 per cent ob-

F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS, Centrifugal Roller **ZIJENT** 

Mining Machinery of Every Description,

Steam Engines and Shingle Machines.

SEND FOR CIRCULAR.

WINING

SAN FRANCISCO, CAL.

PERFECT PULLEYS

BOILER

ole Livensed Manufacturers of the LOTO First Premium Awarded at Mechanics' Fair, 1884.

SHAFTING, HANGERS AND APPURTENANCES

Medart Patent Wronght Rim Pulley



GENERAL MACHINE WORK, ARCHITECTURAL IRON WORK,

Ice and Refrigerating Machines, Shaffing, Pulleys, etc.

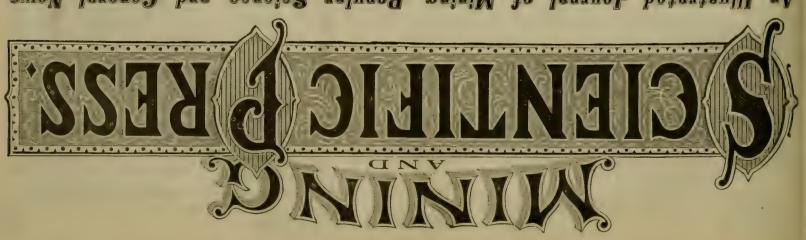
SLEVN ENGINES'

MACHINERY

Ben Francisco, Cal SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco.

No. 45 FREMONT STREET,

Nos. 129 & 121 Fremont Street,



ТОГОМЕ ГУ. Митрег 18. BA DEMEA & CO. SAN FRANCISCO, SATURDAY, OCTOBER 29, 1887. Illustrated Journal of Mining, Popular Science and General News.

Exits from Underground.

os enim mort og bluce nem mine to some general aystem of connection by which, in Where there are groups of mines close together on one lode, as on the Comstuck, it seems strange that there was not long since

where the attention of others to this prace. In some one of others to this prace, In some mining. There are several projects now or we illustrate on this page the double-oyling der reversible, link-motion, double-triction drum and brake-hoisting engine, manufactured the properties are building dredging machines for the invertebel and the origins are proposed. This week articles of incorporation is the link week articles of incorporation of the invertebel and original practical properties or pr high speed and large hoisting duty. The pater and ent triction drums are of large diameter and spirally grooved for wire rope. They are simrot bebnetni si bna ctosquoo bna bilos si enig ostried on in the future. Should the Butte inclines and in mine shafts, under either of county company be signally successful, its example will be followed by many others in vaperfect satisfaction. In general design the on-

ample will be followed by many others in va-

Improved Hoisting Engine for Mines.

The tact that the Big Bend Tunnel Company Another River-Mining Project.

turned the attention of others to this branch of and blog tot enim of doidw ai bed-revit to selim of Butte county have been willing to spend and a few a few about a million of dollars to lay bare a few

been very rich in gold een Redding and Middle creek ent otni yniydme Bloremento inver deeus that all the streams is a well-known fact south three miles. gaibastzs bas pany, opposite Middle Shasta Water Comdam of the Sacramento river; comedt ai swislo gaiaim cate, buy and sell ol of si unagmos edt mick. The object of ler and James McCor-M. Gleaves, J. H. Mil-R. M. Saeltzer, James L. S. Barnes, H. R. Wiley, R. G. Dann, F. H. Daykin, Ed. ward Friedie, F. P. Primm, W. L. Brown, for the first year are: \$1,000,000, half of sub-dus need sad doidw soribed. The trustees Location, Redding, Shasta county; capital \$1,000,000, half of -moo Mining Com-pany have been filed. Saoramento Atlver

start bed from the nature tant bed-revir edt to

deposits, and it is be-

LIDGERWOOD MANUFACTURING COMPANY'S IMPROVED HOISTING ENGINE FOR MINES.

Треве сав вреесіју ре гетогей ій саве об еплетanother, temporary bulkheads will be thrown up across the drifts at the dividing line. The fact works are at Brooklyn, N. Y., and offices and eired. Parke, Lacy & Co. are the San Fran-employes of one mine passing through into divert salesrooms at 96 Liberty street, N. Y. This is cisco agents of the Lidgerwood Manufacturing another, temporary bulkheads will be thrown

ment desire to prevent

In case the manageto Potosi on the south.

from the Union Con-attrou edt no betabiles

connection on the up-

an almost unbroken

cident. There is now

os lo esso ni sosima

edt of gaibsel stlads

necting drifts to the

underground employes

stock lode to prepare for the exit of their

ing mines on the Com-

-basi edt lis 10 taem

Curry fire have

the fatal results of the

would be helplessly

men at work below Ila data niam

and there are thou-

deep shaft considered очлега who випк а thing practical. Mine-

other simply compelled to sink aned of qidsbrad a ti

possible accident, eqaose to snasm

accident in the worked where, in oase Saied senim to sbass

.benosirqmi

Gould

It seems now that

тргоивр узгоия

summer at the Gould and Curry. miners will work with more confidence, and the community need never be startled by such dreadful accidents as that which happened this different points can readily be made. ta redto edt ot misle ene mort noiteenne tadt shafts, drifts, levels, etc., on the various mines rangements proposed. There are so many these Comstock mines, it will be of compara-tively slight expense or trouble to make the argency. In the present condition of development of In the present compara-

kept busy in transporting the products to San which have been shut down for some time, are sere schoolers are THE smelting works near Melrose station,

covered at Red Lodge, 60 miles south of Billings, Montana, which yield, beside large nag gets, 10 cents to the pan. PLACKE mines are reported to have been dis

> veins are very large but contain rebellious ores which have never been successfully worked. the future of Meadow Lake district, where the is thought, says the Virginia Enterprise, that this result will have an important influence on per of the assay value, paying about \$10 per too, and less of the month was in the paying and the total too and the too and th

> Old Meadow Lake,—A cushing of Meadow Lake ores recently made at the new quartz reduction works of L. M. Carr yielded 86 per reduction works of L. M. Ostry yielded 80 per reduction works of L. M. Ostry 1910 1910 1910 1910

ther information desired regarding this engine.

Company, who will cheerfully furnish any fur-

the aborigines of years ago. hammer and copper bowl were found, left by 30 miles back from the Grand Marais. FRESH discoveries of gold have been an-nounced on the north shore of Lake Superior,

Mining Company, near San Juan, \$500 for vio-lating the Sawyer injunction relating to by-JUDGE KEYSER has fined the Eureka Lake

> thrown into gear and the engine ase as a regu-lar reversible engine, one load being hoisted.
>
> while the empty oage is being lowered.
>
> The obvious advantage of this style of engine the other is hoisting; or both drums may be with the engines in motion, either separately or together, or one drum may be lowering while They may be thrown in and out of gear Both drams are loose on the dram shafts and are entirely independent of each other in operatrack inclines, or double-compartment shafts. pany, and is specially recommended for use in connection, duth the tail-rope system, doublefor mining purposes manufactured by this comsalesrooms at 96 Liberty street, N. Y. This is but one of the many styles of hoisting engines

the water, sections of the river-bed can be laid done with the minimum of friction and wear lainer Oompan bare and mining be carried on. It is pretty cer
on the engines. The same sind of mining will be dram action is also very desirable at times on dranific mining. while by reversing the engine the tail-rope is wound up and the main rope paid out. This is and loose on the shaft pays out the tail-rope. drum being thrown into gear winds up the main rope, the other drum being out of gear for the tail-rope system is evident, for as on

> this State where the aurilerous material at the river-beds sould be mined if capitalists were are an arrelation of the statement of the statem required for working.
>
> There are doubtless many other places in the remainder from sections of the stream as lliw sesoquuq yaidegirti bas yaituteshunam rol gaiatut ai acideroqroomi edd do stodel edd assel from the river 100,000 miners' inches of water are now lying on the bottom. The fact that the Shata Water Company will divert blog to stisoqeb tesv

n be made or great flumes constructed to carry few months each year, mining can be carried on.

The old method of "wing-damming" cannot
be carried on everywhere, but where tunnels owing to the flow of water in the stream, a vor it is possible to divert the water for a river-bed which have never yet been touched, been worked out, but there are many miles of sonis and svad stad seadt to tsom samos 10 of the gold came from the bars in the streams. willing to venture their means in advance as bas Dr. Pierce of the Big Bend Company. In the arly days of mining in this State the bulk of the

### Gravel Mining in Colombia.

U. S. of Colombia, near its northern boundary, between the Cauca and Mechi rivers: Although Colombia has been a Republic for , sinpoitan to estate off mori awollot as setirw formot vinit of the Trinity Journal

styles and modes of working, except where for-eign capital and enterprise have stepped in and taken hold; and as all the mines near me are owned by foreigners, and they being Americans and working on the regular California system, the contrast is very marked indeed. The Colombians have industries, have, been carried on in their old yeare, it has made little progress, owing to the frequent revolutions and the uncertainty of pro-tection. For this reason the mines, as all other

Three Systems of Gravel Mining, in Three Systems of Gravel Mining, to "tore ornido" as they been the distinguish it from "tore ornido" as they been sold "be distinguish it from "tore ornido" in the little extended," as it requires but little expenses to fit mp. The entire outfit consists of persons as it requires but little expenses to fit mp. The entire outfit consists of she have been about the state of a prospecting pan, but with a low! be she wooden pan about the state of a prospecting pan, but with a low! bowled in the state of a prospecting pan, but which and be she wooden handle, and shape of a horey and with a wooden handle, and shape of a horey and with a wooden handle, and shape of a brock and with a wooden handle, and shape of a brock in each hand, they need to be briefly against the process. Which are never-absent wooden handle, and which, one in each hand, they use instead the prefect and, which they use in opening a sufferning the the ground shows well, they prospects at this outsing the prefect and shows well, they pround the perfect of spectond shows well, they pround make a perfect bean water at this business and could make a California miner as this business and out of palm branches and ir an out on ear and in an our can be see how quick they can wash a parlial and not one sold make a clay is made, and not the second system is the work done in the transit of the second system is the work done in the onesets and river-beds, where they and they are the work and it they where they are they are they are the work where they are the condition of the water where they are the state of the where they are the work and the second system is the work done in the condition of the where we see well and the condition of the work where they are the condition of the second system is the work done in the condition of the condition of the second system is the work done in the condition of the condition of the second system is the work done in the condity where they where they are the condition of the second syste

## Work It by Diving.

Taking the "bates," putting a heavy sack in it, and sitting on the edge of a cance, let go, in it, and sitting on the edge of a cance, let go, sinking to the bottom of the stream, where they quickly scratch the "bates," tull of gravel, and coming to the restings found the sund coming to the surface, dump it into the cance, and, after restings and so on till the same operation, and so on till the same operation, and so on till sively in the Gauca and plan it out. This work is carried on extendand part of the cance full, when the great serviced on extendant of the cance full, when they go to the beam and pan it out. This work is carried on extendant of the cancer in the service of the same will the force of the service of gold in one will the foll in the Porci river, but it ago, A princely fortune awaits the man who will thoroughly open the Prorci river, but it will thoroughly open the Prorci river, but it will thoroughly open the Prorci river, but it and a hear search of the seasons here, it is a dangerous until the work, and also lots of gold is panned out in the work, and also lots of gold is panned out in the work, and also lots of gold is panned out in the work, and also lots of gold is panned out in the work, and also lots of gold is panned out in the work and also lots of gold is panned out in the work, and also lots of gold is panned out in the work, and also lots of sold in panned out in the work are such as solve that the annual gold these the work, or a such a solve that the carrows."

The third system, to me, is the most peculiar of all it it is ealled "Minas de cerros," or all it is ealled "Minas de cerros," or the carrier in Themps and "Allians of Goldon o

### High Bank Mines,

When I sit is called "Mines de cervos," or among the hank Mines.

When I strived in Temens I saw banks, prized to hear the hydraulic syspins of them over that neither the hydraulic syspins of them over that neither the hydraulic syspins and ever sever solved when I saw the pickes and shovels were tools not thought of. He is in all mines, the first object is water, and their style of ditch-meking is queer, though of a certain grade. They commence at the upper and of the ditch, and after making a small piece, let the water in and select the ditch, and they can all the completed, they can already select on the leading selection of the bank, they clear of a small piece, let the water in and a lead of the water in and bearing stade. They complete they are all the completed, they but in took dame in the ditch, and in the complete of the ditch about 10 inches to a sold the selection of the leading to a sold like the completed, they but in took dame in the card and selection of the ditch, but generally shout on a stockligh, the number of dame described on the length of the ditch, but generally shout a stelling the passing sand and gravel about a settling the passing sand and gravel in the earth and the sold, they conver a settling the passing sand and gravel in the bength of men to work a mine of this class, for crowd of men to work a mine of this class, for crowd of men to work a mile of the percentiseted of whe bank from as to mine test biok. The beat known as allowed of men to work a mile the bank from a subject on the centre of the beat known on the bank from a subject on the centre of the beat for the subject of the percent of the bank from as to be preceded the convers a small piece of ground, for every inch of its the bank from the subject of ground, for every inch of the converse a small piece of ground, for every inch of the oreal converse a small piece of ground, for every inch of the converse of ground down the beat the described to the process of ground, for every inch of the converse and process with the b

### Smoky District.

Smoky district during the present sesson has enjoyed a fine share of prosperity, and while in some ways perhaps a better showing could have been made, the general results have been math, the general results have been made, the general results have been made, the general results have been the vant of capital, and it is slow work to interest of capital, and it is slow work to interest of operations when their time is fully occupied in older places. All that is required is patience, which in the development of a mining country never ceases to be a virtue. Many localities that can down prominent in the amining world safe and privations sustained before their boom came, but peristent works and integer social to the bard struggles andured and privations sustained to fit owner, worked themines in securing the sid of capital, else, through the individual their capital structs and privations adversally of the new securing the sid of capital, else, though the face in the integer of the owner their maters to be a face owner their maters to being operated themines in the prominence on their merits, anough the day in the development of their property, that in the development of their property, that is known to give to the caretal results then their property, that would be to being operated on a large scale. Smoky is destined to be a fine camp, and is brought before the public. With all its vannies browned by pour men, who patiently labor day by wealth the Court d'Alene contraty can show and been world development of the seale. Smoky is destined to be a fine camp, and is brought before the public. With a large scale is and ordinal and the places and bringing in means to build up the place and bringing in means to build up the place and bringing in means to build up the place and bringing in means to build up the place and bringing in means to build up the place and bringing in the op ai elidw bas ettreaperity, and a helje in Smoky district during the present season has

### The Anti-Debris Agitation.

Senators and Representatives of this State: The following is a copy of the letter sent by the President of the Anti-Debria Association of the Caeramento valley to the United States

Dear Stw. I am instructed by a resolution adoption adoption and instructed by a resolution adoptivable by the Ami-Debris Association of the Sacramento valley to request you to visit Maryaville at your valley to request you to visit Maryaville at your earliest convenience to examine into the condition of The object of this invitation is to afford you an The object of this invitation is to afford you an The object of this invitation is to afford you are the concentration of California the effect of hydraulic mining upon our navigable trivers, which, by the set of admission of California paired. It will also give you very important information as to the condition in which the Bay of San mation as to the condition in which the Bay of San accompanies of the continual accompanies of the continual countinual to the continual control of the continual control of the continual control of the control of

on or.

I hope you will make it convenient to come at an anoresarly day, as I consider it a matter of great importsarly day, not be active and members of Congress
should be fully informed by personal observation of
the menaced destruction of the entire Santemento
valley, with its cities and of the harbor of San Francisco.

ousco.

An early reply is requested, If you will name a day on which you can visit us, we will meet you at day on which you can visit us, we will meet you at one full day, as we can rake you to points upon the rivers in that time which will give you a correct idea of the situation, Yours respectfully, CHARLES E, STONE, Pres, Anti-Debris Association, Sacramento valley.

Howker, Sands Sands Sands Sands Sands Sands Pers. Multiporters I Sands S

THYERY KANOUS AMERICAN INVESTIONS.

The 15 grest American investions of worldwide adoption are: 1, the cotton-gin; 2, the
plearing machine; 3, the grass-mower and reaper; 4, the rotery princing press; 5, navigation
by steam; 6, the hot-air engine; 7, the sewing
by steam; 6, the hot-air engine; 7, the sewing
machine; 8, the india-rubber industry; 9, the
machine manufacture of horseshoes; 10, the
sand blast for carving; 11, the gauge lathe;
12, the grain elevator; 13, artificial ice-making
on a large seale; 14, the electric magnet and its
practical application; 15, the telephone.—Day,
ton Democratic FIFTEEN FAMOUS AMERICAN INVENTIOUS.

ble great difficulty in washing out all the solu-

be great difficulty in washing out all the solube great difficulty in washing out all the gold,
As soon as the tanks are filled as stated, they
are ready for the introduced into the bottom of the
gas. This is introduced into the bottom of the
tank from two opposite sides, and is continued
tank in a mamonium chloride. This usually
takes about four hours. When this point is
teached, covers are placed on the tanks and the
bran and water. The gas generators, of which
there are two employed at one time in charging
a tank, are allowed to work on until they are
brianshed; then they are disconnected and the
attank, are allowed to work on until they are
attank, are allowed to work on until they are
attank, are allowed to work on the parging
there are two employed at one in the
corning, and is left standing for two days. On
the third day the ore is leached. The sam is
the third day the ore is leached. The stank is
the third day the ore is leached. The stank is
flet winthes, and is left standing for two days. On
the third day the ore is leached. The stank is
all the ore. It no more water may penetrate
into is drawn off at the obttom, care being
liquor is drawn off at the obttom, care being
taken to keep the tank full of water during the
ontire operation, which takes from four to five
bours.

In oharging the tank, a gunny-sack is laid on
the day the ore tanks and on the days.

In oharging the tank, a gunny-sack is laid on

o bise list as genery as genery sack is laid on the charging the tank, a genery-sack is afterward to be the ore, where the water in the tank and prevent its washing and packing the ore.

### The Liquor from the Leaching-Vats

Is conducted to settling or storage-tanks, and a conducted to settling or storage-tanks, and a conducted to settling or storage-tanks, and about 40 pounds of aniphuric soid (66.8.) is added. (Experience has shown this addition of soid to be advantageous in obtaining a clean product in the subsequent precipitation. The conduction is, however, by no means clear.) It is ensually allowed to stand for \$M\$ fourty but two hours are quite sufficient. It is consistent at a subsequent standard the for the hours, but two hours are quite sufficient. It is consistent and the soid of the standard of the standard

### In Making the Cleanup,

The superness and placed in Making the Oleanup,

1. The superness and placed in a filter of purched iron, lined with a subcoted in a filter of purched iron, lined with a select of ordinary purched iron, lined with a select of ordinary diet melted in curoliles and washed with water until all all dired, melted in curoliles and cast into bare.

The works extract from 95 to 96 per cent of the assay value of the concentrated sulphides.

The works extract from 95 to 96 per cent of the assay value of the concentrated sulphides.

The works extract from 95 to 96 per cent of the sacray value of the concentrated sulphides.

The works extract from 95 to 96 per cent of the land.

The sulphite of ore allotted to the works, only three such iron and land.

The sulphite of iron is manufactured on the specific process of the sulphide of the word and subcined and subcling outside the building in the open air, is used. The sulphide of the open of the open of the sacrap iron as in the open air, is used. The sulphide of the open of the open of the sacrap from a labout 40 pounds of send are added to the tank.

The precipitating the ore, I which are of wood, one the tank of the tank.

The precipitating the ore, I which are of wood, one the tank of the tank.

The profected from the action of the soids by a corp processed from the saction of the cash of the cash of the open one of the subclime of the per month of 30 days. Consumption of ohemicals in the leaching department, 24 days in each month.

The subpite of the per month of 30 days. Consumption of ohemicals in the leaching department, 34 days in each month.

The charge is mangenees, 80 lbs., salt, 84 lbs., sulphuric acid, 60 lbs.; therefore, for two generates as a lbs. sulphuric acid, 60 lbs.; the sulphuric acid, 60 lbs.; as a lbs., sulphuric acid, 60 lbs.; as a lbs., sulphuric acid, 65 lbs.; ber ton.

283 84 lbs., sulphuric acid, sulphuri # Sing; Subject day, for day, for day, for 30 days. # \$2.50 per day, for 50 days. # \$2.50 days. # \$2.50 days. # \$2.50 days. 87 0978

Total, .... Total, .... on concentrates, \$9.40 3-10. 98 076\$ Acid for settling-tanks (40 lbs.), and for settling-tanks (40 lbs.), 24 days.

(40 lbs.), 24 days.

79 days of leachers, at \$5.50, for 30 days.

Salary of forenan per ton. 12 24 days, at \$60 per ton, 250 per to

Gold in Colombra.—Excitement is on the increase in Santander, owing to the discovery of riok gold mines. People are flooking to these fields from all quarters.

Chlorination Process in California.

Details of Operations in Amador County.

The following notes on the stamp-mills and chloring and consoli-

Small, E. M., Oconomowoc, Wie.: dated Gold Mining Company, Amador county, Cal., were read at a meeting of the American Institute of Mining Engineers by George W.

Small, E. M., Oconomowoc, Wis.:

The ore, as it is raised from the mine, has as average assay value of \$11 per ton, otherly in the form of free gold. All the ore goes directly to the stamp-mills, of which there are two. The older and larger mill contains 16 batteries of five stamps each, with one frues to vanner to each battery. The new mill is driven by each battery. The large mill is driven by feet, and a consumption of 600 miners inches each battery. The smaller mill is driven by "hurdy-gurdy" wheels with a pressure of 16 set, and a consumption of 600 miners inches of water.

of water, de the trailings from the stamps of At Doth mills the tailings from the of At Dese on their way to the Frues. In each set of plates are so-called or upper one is copper; the rest are so-called silver plates.

The bullion from the stamps is about 800 fine in gold and 200 in silver.

The Concentrates From the Frues

Average from the Frues
Average from the Frues
Average from 14 to 13 per cent of the ore
stamped. They very rarely exceed 2 per cent.
I was unable to get the exact assay value of the
and \$200 per ton.
The concentrates, but it is said to vary between \$100
and \$200 per ton.
The concentrates are breated at the chlorination works at the rate of 100 tons per mouth.
The capacity of the works is somewhat greater
then this, but as the supply of concentrates is
limited it is not deemed advisable to work them
the prices at one deemed advisable to work then
the prices of the works is seed to work then
the prices begins, forming lumps which do not
conset, and which consequently cause a loss of
the prices begins, forming lumps which do not
large, if this is not done, a decomposition of
the prices begins, forming lumps which do not
cost, and which consequently cause a loss of
the prices begins, forming lumps which do not
for it this residues from leaching.

A Fortschawfelungsofen is need for rosating.
The hearth is one continuous plane, but the
turnace at one time, are kept entirely separate.
The furnace are no sill the three ounpartthe our which there are three in the
furnace at one time, are kept entirely separate.
The furnace-men call the three compartthe furnace-men call the three in the
furnace at one time, are kept entirely separate.
The furnace-men call the three ounpartthe furnace-men call the state of
the converse of which there are three in the
three of which continued to the contract of the contra

### Тре Furnace

and worked by eight-hour shifts, one man on each strike took eight-hour shifts, and one charge is drawn and as and as and so halfs, and one charge is drawn and such shift. The obayes weigh 2400 pounds and carry about ten per cent of 2400 pounds and carry about ten per cent of in moisture. The ore averages about 20 per cent flaming (in the second division of the furnace), and added to the charge.

18 pounds, or three-fourths per cent, of salt is self to the charge.

18 pounds, or three-fourths per cent, of salt is self to the charge.

18 pounds, or three-fourths per cent, of salt is self to the charge the best and salt is to control tons to control the consting, for, if only one of the trol the reacting, for, if only one lot out of the trol the reacting, for, if only one lot out of the trol the reacting, for, if only one of the trol the control the worked by that the fault the worked it is presumable that the fault the worked it is a presumable that the fault the worked it is a presumable that the fault the worked is and the probabilities are that there are mandered as the ore, and the reacting process must be altered accordingly.

11 per property of the control and the coordinates of the persumable that the control and the control ingly.

### The Vata for Chloridizing

The Vasts dore of the Thirdischer by the Peats for Ohloridischer by three feet in diameter by three feet in hight, and are four in number.

They are slightly inclined, so that they will drain completely. The bottom of each tank is there composed as follows: Light strips of three composed as follows: Light strips of three quarter inch wood are first laid in the bottom of the tank at intervals of shout one foot. Across these strips are laid six-inch boards, he leaving cracks of an inch or more between the boards. On top of this loose door are lumps of this loose door are lumps of the foot on the boards on the boards of this "sand in the boards of the loose floor, the boards living to the total by the loose floor, the boards living croesavise to the loose floor, the boards living croesavise to the loose floor in the loose floor bear look is intended merely to furnish a shooting the floor is intended merely to furnish a shooting the floor is intended merely to runnish a shooting the floor floor contribut the look of the leached one to the lacked out disturbing the filter.

The out disturbing the filter.

Figures at the respect of the factors will remove the remover of the factors of the factors of the ore to be chloridized must be working fabout six per cent moisture). The working test is, to take a fandful of the ore and squeeze it, then open the hand, and if the lump immediately begins to crumble and fall apart (not run) the ore ass the requisite amount of moisture.

The damp ore is screened into the tanks, so that it will lie as loosely as possible, and facilitate the precise screen of the chlorine gas. A conses screen of one-half inch mesh is used for

Are only filled up to within about three inches to the top. This is to insure that the entire contents of the tank are covered by water in fine mules from the Granice Creek ranch, East-the subsequent leaching, otherwise there will ern Nevada, to the San Josquin.

Skagit River and Cascade Pass, W. T.

trip up the Skagit river to the Cascade Pass re-turned a few days ago, and give the following Two men from Seattle who have been on I

is the finest by a sean in the Territory, being the most by the mo Turned a few usys key, such seek report of their journey;

They say the land slong the Blaggit valley, from Mount Vernon for 56 miles up the Tivory, is the finest they have seen in the Territory.

They found settlers all the way up to the junotion of the Cascade and Skagit rivers, and were, in the Cascade and Skagit rivers, and were

leet to the mile.

The view from the summit is magnificent, and the headwaters of a tributary of the and he seen wending its way to its confuence with that river. Altogether, the confuence with that river. Altogether, the tregion is a grand one, possessing a rich agricult. Ursl valley flanked by hills olad with the fineest timber, and having hidden within their bosoms was mineral wealth.

wast mineral wealth.

Altherat, Lands and maying finder when the vote vast mineral wealth.

Altherat, Lands and maying for dated October 20th says: Secretary Lamar to-day beard the argument of a review of his decision, rendered some ment of the representatives of a reconstruction of a review of his decision, rendered some by railroads in excluding mineral lands from the selections. Some months ago Commissioner Sparks asked the secretary to change the regulations. Some months ago Commissioner Sparks asked the secretary to change the regulations of that hereafter the railroads regulations of that hereafter the railroads regulations of that hereafter the railroads would be compelled to file an affacting to the railroads would be compelled to file an affacting the rone of the railroads commissioners are the restricted some that of the lands selected some that the counsel, showed a letter the restriction of the file regulations of the decision was almost immediately reduced and changed the regulations so as to compel this part of the engilations so as to reduce the changed the regulations so as to reduce the consequence of the englation of the railroads to mineral land through which all the lands of the railroads to serve track which are the regulation of every track which would be regulated by the regulation of every track which and as a United beat mark ment and as a United to truth to the regulation of every track which are under a pre-emption affact would be depended upon, and as a United to truth to truth the regulation. The second of the decision we are the consequent of the decision were the second of the satisfact.

The decision was the consequence of the satisfact.

The man man are the consequence of the satisfact.

The decision was the consequence of the satisfact.

The decision was the man

EL DORADO CANYON,—The mining outlook at El Dorado Canyon is not very promising. The Southwestern Company are about to close Southwestern Company are about a close of the Savage and Techatticup mines, assorting over the Garage and Techatticup mines, assorting over the dumps and breaking over from the Croppings, and will donation working what ore they until the militation mines working what ore they nearly the militation of the company pave under consideration the advisability of sinking a prospect action to company have under consideration the advisability of sinking a prospect about the the mines. The cill Doradoirea are and Techatticup mines. The El Doradoirea are and the directors.

bigh, and fired with from 6 to 15 inohes of light owod. Such a pile will contain about 80 to 00 owod. Such a pile will contain about 50 to 00 of matte or pyrites, and will burn that since 40 days. The material is briden for the contain a briden were of the avoid fines. A heavy layer of wood will cause a woid fines. A heavy layer of wood will cause a thicker result in a very excellent tosat; a pile recently burned with 6 inohes of wood gare 3 cently burned with 6 inohes of wood gare 3 cently for a fines of the contain and an equally good rosat.

yend roase.

Pinyon pine will not do for the operation saw offered and all equality of the person and even red pine. It qualities asply belsam and even red pine. It distribes too hot a fire. The seasy of one of the seasy of the seasy of one of the seasy of the seasy of the seasy of one of the seasy of the one of the one of the seasy of the sea

The Presence of Copper.
In increasing quantity of late years in our oves, and, or who have been considered by the copper and, of courses, in the matte, has made the late for more tusible. Now since disalphide of copper is much less fusible than protesulphide of copper is much less fusiblity of polybasic slages, that is much those which are monobasic, that is, that the unliphication of bases in creases tusibility in matters, as it does in silication. It has been contained that a doly grain mixture of equal periment that a doly grain mixture of equal periment that a doly grain mixture of equal periment that a doly grain mixture of equal and the commercial FeS fused in a Hessian and the commercial fes fused in a Hessian and the commercial fes fused in a Hessian crucible in colection.

France of FeS required seven minutes and an equal weight of the opper matter did not fuse equal weight of the opper matter did not fuse equal weight of the opper matter did not fuse equal weight of the one removed from the first become of per per removed from the first become of per removed from the per removed from the contraction of the per removed for per removed from the per

The cost of pile-roseting 5134 tons of roseted matte at the Hanzuer Works was \$2.25 per ton, distributed as follows:

The selected rossted matte usually contains of per cent of sulpfur, being a three-quarter rosst. The pile-rossting of ore that is coarse and sometimes better. The sulpfur good results, and sometimes better. The sulpfur is S2 tons of ore recently tested was reduced from 27.6 to 6.57 per cent of raw strippings which had to be retreated. The coast of rosst, and 14 per tested. The coast of the single rosst, and 14 per tested. The coast of the single rosst, and 14 per tested. The coast of the single rossting was been contained as the coart of the single rossting was 60 cents per ton. on cents per ton.

Suowester, The cose of the single freester, was been the tail.

Suowester, The cose of the single freester, the cose of the spirit of contrast that the cose of the spirit of the cose of the spirit of the cose of the continuous shed for 35 elers. As the trains bound fast leave Emigrant (3sp the trains bound fast leave Emigrant (3sp the trains bound fast leave Emigrant (3sp the track being buried under falling and drift. They secure this end, but are them. They secure this end, but are them. In the constitution of these shede, as the noise, the loss of view, and the continuous selves the coession of great inconvenience, and drift. They secure the theorem of these shede, of the construction of these shede, where the road rosses the Rocky mountains from the track for a distance of 1300 feet, and to the head to for each of the constructed. Along the arrive length of the free the company built 44 miles of the mountains showed that seventh of these observations in the track for a distance of 1300 feet, and to the depth of 50 feet. The result of these observations in snowshot as the normone servations in the track for a distance of 1300 feet, and to the depth of 50 feet. The result of these observations in snowshot as the company built 44 miles of the mountains slopes orib filled with stones are constructed. Along the sum of the head snowed that the company built 44 miles of the mountain slope a crib filled with stones are laid from the coppetite side or the press. A should be showed the sum of the beant of the slope of the constructed as of the slope of the track of the short are the sum of the the slope of the slope of the constructed over with the beant to the order of over with the beant to the center of the slope of the

tican.

THE TOWN OF ELISTON.—The fown of Elliston is a situated on the Northern Pacific railroad.

The principal business of the town is mining, though there are other industries, such as farming ing and lumbering. Quite a number of the most ings have lately been recoted, one of the most prominent of lumins is though. It adds greatly to the appearance of the burg. Recent mineral isinment of lumins & Hopt. It adds greatly to discoveries in the vicinity of lilliston have hed a factor of the burg. Recent mineral dents of the town. A number of mining sales for the properties purchased, Many old-time greet for the properties purchased. Many old-time prospectors are still out in the mountains looking the procedure now. Some have here is a some are still out in the mountains looking the procedure rock. Some have returned, and with them came fabrilous reporties purchased, shift the procedure rock. Some have returned, and with them came fabrilous reports of rich finds.—Buttle Miner.

Ore and Matte-Rosating in Utah,

(Concluded from our last.)

Read by Richand H. Tennune, of Salt Lake City, Utab, before the American Institute of Mining Engineers.)

In February, 1886, a rare opportunity was afforded by the conress of Mr. E. C. Chambers and the Daly Mining Company for

As an area of the state of state of the state of state

settuse Results:

I. Main stack, early part of run, side open-ings, 15.8 per cent sulptur in ore. S. Hotter furnace, central discharge open and both holes closed, 6.2 per cent sulptur left in

3. Obamber dust, 5 per cent sulphur left in

Side openings only, last of run, 4 per cent

die openings only, last of run, 4 per cent auphur in ore.

5. Faster run, return flue, last of operation, 5. Faster run, return flue, last of operation, 6. Mill sample of entire run which we could extract from chambers and furnace, 7 per cent sulphur, 17.5 lasd, 15.75 silver.

The tons of iron matte of the following composition was provided for treatment: 22 sulphur, 19 read of copper, 55 iron, 59.5 ounces silver per ton. Of this amount only three tons were treated, owing to its obstruction of the battent screens and trouble with ceding apparatus of the enems and trouble with ceding apparatus of the in the the tregion. The mill sample of the rossted matte showed the in the two forms of time of descent. The rossted matte two was near the form the paying are necessarily contaminated with the pyrites of the conveyors. The iollowing are assays in the conveyors. The iollowing are assays and the conveyors. The iollowing are assays and the conveyors. The ioliowing are assays are also and the conveyors. The ioliowing are assays and the conveyors. The ioliowing are assays and the conveyors. The ioliowing are assays are also and the conveyors. The ioliowing are assays and the conveyors. The ioliowing are assays and and the conveyors. The ioliowing are assays and the conveyors. All the conveyors are assays and the conveyors. The ioliowing are assays and the conveyors and in the conveyors are assays and the conveyors. The conveyors are assays and the conveyors are assays and the conveyors are assays are assays and the conveyors.

the time and chamber dust mixed the third in 19.8 (19.8) ( Main stack, early part of run, aids and keeple, early part of parts.

18.11 33 and 18.15 and pluts.

18.11 30 and 18.15 and pluts.

20 and chopper, last of the matter.

19.29 and pluts.

10.39 and pluts.

10.30 and pluts.

10.30

\$9.62

62,40

84.23 6 58

Between adhesion to saide-walls and loss of this simple or the control of the con

Pile-Rossting of Ore and Matte

dirt and gravel that lie behind the little dame. Yet in this;

dive and gravel that lie behind the little dams.

Yet in this:

Orude Way of Working

150,000 in II years, and gold was selling low price the among to these mines took out over \$300,000 in II years, and gold was selling low price the among would have been over \$300,000 in II years, and gold was selling low modes of washing from my description. Since an even in the regular from my description, slines arriving in Tamana I have fitted up the mines arriving in Tamana I have fitted up the mines arriving in Tamana I have fitted up the mines are rich. They consists of three locations of a greater each of \$2 agent a most.

They have a greater each of \$2 agent a month of a greater each of \$2 agent a month of a greater prize to the control of a greater each of \$2 agent a month of a greater prize to the control of a greater prize to the control of a greater from we for a greater and then we can turn out gold at a very lively there are the company will soon put on another disch and then we can turn out gold at a very lively lively a greater provided the second. The water, quite cool. Therefore, the second of the company will soon put on another disch and the supply at present is light;

I have yet seen it was \$8°, and, though not farter anong trong of the weight here blankels the bave and anything except in sealed can will spoil. Therefored a greater blankels the provided from the court, and anything except in sealed cans will spoil. Therefored a suitable food, which is hard to procure, of olosity to pay for them for the angar, and when the host, and every idle day they they so gones in the sealer and avery idle day they may 50 cents for both of the workman is beans, rice, of olosity to pay for both of the workman is and wery lower. Their pays the man are an all go beaterlooted. They are fired. They so they may all go beater for or the order of the when they get full 10 of "they gold of the when they get full good. They when they get full good of the area of the greater of them are lend to be a sear of them are lend to be

### Atlanta District.

a company, from Pedler and Davie, a mill was boilt bad been and the property was purentaged by the factor of the f pects in sight were flattering, and expectations ran digh in regard to the future of the camp, In 1881 the Tahoma property was purodased by Ketchum Keystone, is a more satisfactory one at the present time than it has enjoyed for many years. Years ago, when the Tahoma Company first began its operations, the prospection is given that the prospection of the prospection of the prospection of the prospection of the prospections and prospectives. The outlook of Atlanta district, says the tnentaerT erO weM edT

### Reaching After the Ideal.

of the young, especially when these ambitions snoitidms virse edt trawdt ot teed ti si syswis continuing it, became afterward skillful and successful navigators of the briny deep. Not duced to stick to the life they had chosen, and, mi erew through this experience were inthem of any desire to further plow the raging them, we may believe, of great service in after life. Indeed, many of them have been heard to say as much; for, while " it cured the most of though a little rough at the time, proved to experience so gained by these amateur mariners, imbaed through such pernicious reading. sea-faring life with which their minds had been sional application of the rope's end, soon dis-abused these youths of the false impressions of perience in the forecastle, enlivened by an ocoatempted many a callow youth to run away from home and embark before the mast, A short ex-The reading of Capt. Marryatt's novels

Bill," illustrated by living tableaux of the scen aspirations of these young fellows rest on nothmore unwise than such parental act, albeit the plains of the interior West. Mothing could be and over to America and engaging in the pastime of hunting duffalo and Indiana on the great English fathers to prevent their sons from o through reflecting on the efforts lately made by We have been led into this train of thought have honorable and useful aims.

practical account. The rifles, pistols and fixed ammunition brought out for shooting wild saicommon to their race, hasten to turn to of which they would, with the energy and good there presented for engaging in business, some Great West, these sturdy young fellows would readily perceive the many grand opportunities But, once among the stirring scenes of the tions of life on the border an amount of fic-tion that made the whole business a burlesque, and bloody deeds, had infused into his des his auditors for the recital of wild adventures to make money and eater to the penchant of they would soon find out that William, in order ity of the average Britisher. encouraged to the undertaking by the gullibil. job on the English public, being moved thereto by a desire to gather in English guineas, and s qu tuq bad saisiq edt to enamor edt to refi presently discover, these boys, that this persondelectation of the groundlings. They would the great edification of the cultured and the had been depicting in the London "shows," to different affair from what William Cody, Esq., buffaloes, the Indians, the cowboys, and the whole tomfoolery, would turn out to be a very n, would find themselves badly sold. described; all large as life and in the light of actual events, a good deal larger. True, these lads, on reaching the theater of

their fond parents feared, would most likely be ss .binoW well edition to the Mew World, as new countries, sell readily at a good price. And so these youth, instead of being hurt Traps of this kind, being always in demand in vary the above sport by lassoing the victims, re snow rimes as it might be deemed best to also the stock of lariats brought along for use shorq a ta blos ed lla bluco nem bliw bas slam sbsorbs money much faster than a real, thor-

done had they remained at home. business positions, get hold of town property, mines and cathle ranches, acquiring at last such resear could have even so much as get a glimpse of cither of these animals. But then they might secure good journeyed a long way from the settlements, or skinning a buffalo—might not, unless they greatly the gainers thereby. They might not succeed in scalping an Indian

izes on the cattle range, however unlike the one seen performing on the London stage. that is he that is the cowboy as he materialtle, and works hard for about \$25 per m when in town, who lives poorly, sleeps but lit-—a person who rides and shoots well, who drinks bad coffee when in campand bad whisky bowie knife, used for cutting bacon and tobaco fore and down behind, sometimes a pistol in his belt-oftener not, though always a huge heels, a slouch hat on his head, turned up bid ot bedeatts stuge spud to risq a bas ,stood rather loose as to fit, his trousers tucked in his his garments rather coarse as to material and mustang an unkempt, long-haired individual, If, arrived in the big Weet, the young Engrishman shall, when searching after one of Mr. Oody's ideal cowboys, happen to see bestride a

> good width. ing to nearly half a mile, it expands again to a half, but at San Diego, after gradually contractthence to the head seven miles. The average width after passing La Playa is a mile and a curves gradually for three miles to the city, and bay runs north a mile and a half, thence it an area of 450 square miles. The idea of comparing a mult this is is paring a mult attificial harbor with this is bound. Ballam and that the more define being the solution of the more than 10 miles of the solution of the multiple of the solution of the s

> so that large vessels cannot come to the wharves ant results. Shoals will gather and bars form, until finally the depth of water will be reduced water which cannot be broken without unpleas There are certain natural laws in the flow of warehouses have been built out from the shores. straits, where so many wharves, mills and are beginning to show themselves at Carquinez tem have shown themselves at the mouth of Mare Island straits, in San Francisco bay, and by building so many wharves at the narrowest point of the bay and "choking" the ebb and flow of the tide. The results of this evil systhe San Diego people are damaging their harbor with wharves, there will be trouble, the people, if they ask their advice, that care must be taken in building wherves. If they dredge out San Pedro and then choke it up In both these places the engineers will tell

> at the seawall from \$1000 to \$1500 to be towed of these heavy gales blows, it costs every vessell place for vessels during northers. When one cove of Saucelito bay, or the artificial harbor in Oakland, in order to be safe from winter gales. Our much-talked-of seawall, to the north, is no Vessels which lay up have to go to the natural concave. As a result, damage is done to ship-ping at the wharves in the winter season. been destroyed, and the convex shore-line made Yerba Buena, Mission bay and Islais creek have which have done the damage. Many foolish things have been done with San Francisco harbor. The natural lines of

> another matter; but wherever much work is undertaken in good faith, it will be found that it only parts of real estate speculations, that is sanction of competent authority. Every man who writes C. E. after his name is not an expert in this direction. If proposed harbors are should be sure to see that the projects have the to invest their money in artificial-harbor works saving in the end. And those who are asked and warehouses to be built. It will be a great too much money or allowing too many wharves southern harbors, either natural or artificial, to take good expert advice before either spending It is much better for those interested in the to a place of safety. The city-front wharves are bad places in the southeasters.

### Salt and Ores,

ough-going assessment silver mine.

the Alice and Magna Charta mines closed down, bas ,basny paid no attention to the demand, and companies said they must quit work on their mines if the rate was maintained. The railroad they brought there, and finally some of the ties edt no tdgiert not a 212 guigaado need sad Alice mill at that place alone consumes some 30,000 tons of salt every year. The railroad salt are used in the reduction of the ores. it is at similar camps. Immense quantities of The question of the price of salt is a very important one to the miners at Butte, Montans, as

wanted it for \$1.50 less. Still it is probable that the Alice mine at lesst will begin work again in view of this reduction. sranim and fly bot too, though the star and series railroad has at last made a concession and put duced to \$7.50 per ton from Salt Lake. to resume work if the freight rate should be rethrowing some 400 men ont of work. The owners of the mines pledged themselves

and if they cannot get good wages at one place, though ed or ere erect strain bellias edt lie rol wages. There is mining enough going on all over the country in these days to furnish work and surfaces men \$3 per day. This seems little enough for a camp where the expenses of living are as great as at Butte. If the company want group miners they must continue to pay good an area of a miner and a miner and a miner and a miner area. ing miners' wages. Underground men get \$3,50 admit of a profit. There is some talk of reduc. nines, expenses must be still further reduced to the present grade of the ore in some of the The statement is made, however, that with

Artificial and Natural Harbors.

in absence of dangerous bar in stormy weather, its perfectly land-locked position and smoothtral location, and facility of ingress and egress under sail; while San Diego has its advantage -dosoroga to didth of approach, cenlong line of coast. San Francisco has the ad-Diego are the only two good harbors on this San Francisco, and the Strait of Fuca, 160 miles north of Columbia, separating us from British territory. San Francisco and San Diego; the Columbia river, 620 miles north of frontier; San Francisco, 500 miles north of San tance. These are San Diego, near our Southern tude in which there are any harbors of imporwhere it is broken by rivers or inlets of magni-Our whole coast-line on the Pacific side is sadly deficient in harbors. There are only four places on our 1300 miles of coast-line

ons to improve other harbors on this coast. condition of affairs there, as it would cost millsons. It would cost millions to improve the being one of the worst in the world at certain good harbor, but its bar has the reputation of they are not yet built. The Columbia river is ficial harbors are necessary in some places; in fact, are hadly needed in many localities where As a result of this condition of affairs, arti-

strange to say, the matter is one which is taken moreover, little understood outside of the few money rapidly, and in large quantities, it is harbor improvement. And it is a subject, If there is any one thing which will consume

real estate schemes with harbor attachment. ments relative to making harbors in the south-ern part of the State. People have laid out Of late, we have seen all sorts of wild stateplane for harbor improvement. even people who never see the ocean, except when they make it a special visit, will lay out ought to be done to improve their harbor, and the coast-line, the people think they know what ence or knowledge. At every little place on up by all sorts of people, without either experiity to plan and carry out harbor-works. To eeds engineering skill of the highest capactrained engineers who have made it a study.

is doubtful if there is any place along there outreadstead, and the construction of any harbor which could be used by vessels all the year round would be attended with great expense. It Now the whole cosat along there is an open who own all the available land in the new place, and they intend building wharves and shops. geles to the new port, by the Southern Pacific, who are driving shipping from that point by their exorbitant lighterage charges, and also that a new railroad will be built from Los Annear San Pedro in opposition to the Bannings, cific Company is going to establish a new port they would of building a railroad, or wharf, or big hotel. We are told that the Southern Patalk of building a harbor in the same way as maintain the structures being built, They Money is being spent now in places where the to mone of eldiscorm ed bluow it betats eval are engineers

about which there has been considerable news-paper talk, has yet to stand the experience of winter storms, and the attacks of the teredo on the wooden bulkheads. name only. The other new one, not far off, would sanction the commencement of work, The so-called harbor of Santa Monica is one in side of San Pedro where competent engineers

dredging, which the Government ought in justice to do at once. The large ships do not go in, though the coasters do. A company has been The artificial harbor needs a large samount of roadstead, dangerous in winter southeasters. as the bay of San Pedro itself is only an open breakwater some 7000 feet long has been built, tion is favorable for the works as planned. A was not finished long since. The necessities of a growing commerce demand it, and the locaapend considerable more. It is a shame that it ernment has spent considerable money and must port of Los Angeles, is one on which the Gov-San Pedro harbor, or Wilmington harbor, the

Perhaps he never saw San Francisco har- and if they cannot ge bor, which has, it may be said, by the way, they can at another. bers of the new company says San Francisco. be made second in size only to San Francisco. rious statements are made. The telegraph this week gravely informs us that one of the mem-But even concerning this artificial harbor cuformed in Los Angeles to improve this harbor, and wharves, docks, etc., are to be built in ad-dition to those already constructed.



DEWEY & CO., Publishers.

Office, 220 Market St., N. E. cor. Front St., S. F. Office, Take the Elevator, No. 12 Front St. 75.

Advertising Rates. Terms of Subscription.

Annual Bubscription %5, Yow understriens will be declined without eash in advance. All arresarges must be type of \$3.50 per annum.

Гоирои Аскит—Агекр Е Аии, 63 and 64 Исw Broad Street, E. C.

Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Entered at S. F. Post Office as second-class mail matter

SCIENTIFIC PRESS PATENT AGENCY.

DEWEY & CO., PATENT SOLICITORS

SAN FRANCISCO:

Saturday Morning, Oct. 29, 1887.

### TABLE OF CONTENTS.

ILLUSTRATIOUS.—Hoisting Engine for Mines, 273. Diagram of the Piping of a Blast Furnace,

PTT.

BDITORIALS.—Another Biver Mining Project: Improved Holshing Engine for Mines, Exits from Underground, SYE, Passing Forents; Artificial and Matural Harbors; Estle and Orice; Resenting After the Ideal, Anticolarly, Miscolaring After Home; Mining After Moreing And Colombia, SYE, Atlante SYE, Atlante and Casses; Utilizing the Encalyphane, SYE, Atlante SYE, Calcular District Ores and Marke Koasing in Ush; Steagit River and Case and Marke Koasing in Ush; Steagit River and Case and Marke Koasing in Ush; Steagit River and Case and Marke Koasing and Case and Marke Koasing and Case and Marke Rose in Ush; STE, Ush; Steagit River and Case and Marke Rose in Ush; STE, Ush; Steagit River and Case and Marke Rose in Ush; STE, Ush; Steagit River and Steague Stea

Ozecade Pass, W. T., 275. Utah's Ove Producers, P. W. Deckers, S. W. T., 275. Utah's Ove Producers, P. V. M. POCHERSS. — An Improved Actes of Pieses, A We Compound Locomodyles, Producers; Person Heard Alloy tor Bress, Mew Compound Locomodyles; Producers; A Hard Alloy tor Bress, Mew Compound Locomodyles; Producers; Person Producers; Person Producers; Person Principle, Pockers; Person Particles, Presidentially from Heard, Cold Dynag, 278.

Person Particles and Papelity, Pressure of California, Syrad, Principle, Person Principle, Press, Press, Press, Person P

### Business Announcements,

samuloO gaisirig Columns. Clayton Air Compressor Works—New York. Boller Scale Preventive—Downie B. I. P. Co. Boots and Shoes—John T. Sullivan,

### Passing Events.

not as low as that demanded, but the conc closed down will start up again. The rate is The freight rate on sait to Butte, Montana, has been reduced by the railroad company, so that probably more of the mines which have

port from the Arctic, after a very successful season. The catch of whales this summer is sion is still considerable.

The whaling vessels are returning to this

for San Francisco ness is now a very prominent and profitable one the largest for years. The whale-fishing busi-

complished, there will be less danger in work-ing underground in those deep mines. The gold-mining situation in this State, as important one for the miners, since, once ac-The movement to make a systemstic connec-tion from mine to mine on the Comstock is an

it iormerly was. that it is no longer the speculative calling that systematically carried upon a business basis Many new mines are being opened, and old ones are being reworked. Quartz mining is now so far as quartz is concerned, is very favorable.

rock from the Delhi mine, Nevada county. Specimens worth \$3000 have been recovered. MEN have been detected stealing specimen

2,000,000 feet. land shipment since Oct., 1st , amounts to THE lumber landed at Port Harford for in-

if the citizens of Truckee will put up a \$200 A FISH-HATCHERY is promised on Donner lake

### Flow of Air and Gases,

on this page another figure from the same paper, showing a diagram of the piping of a blast Gordon before the Mining Engineers. We give In the Perss of last week we gave a descrip-tion of an air-hoist, from a paper by Fred W.

pipe, 1.33 feet in diameter, 14 feet long, with The upper part is the plan, and below is the oorresponding elevation. A, A, are the hot blast stoves; B is the furnace; C, the oblumey; D, gas-flue; E, cold-main, 4 feet in diameter, 72 feet long; E, oold-main, 2§ feet in diameter, 72 feet long; F, hot-main, 2§ feet in diameter, with ore 45° bend; C, pupalisming; H, flue

From stove Al, hot-main and hot-blast valve right angle bende, bend on bottom; L, tayere-pipe; M, hot-blast valve, 17 inches in dismeter, containing two ter, with one 45° bend; G, buetle pipe; H, flue to chimney; J, J, blowing engines; K, down-

waste of the engines, making the volume per second 195 feet. The observed pressures and nominally blowing 13,000 feet of blast per min-nte. This we reduce by 10 per cent for the inobes in diameter, 7 feet long. The engines are have a total length to bustle-pipe of 26 feet.
From the bustle-pipe to the nearest tayere is 4 feet, and half-bend from hot-main; diameter, IY inchees. There are seven tayere-pipes, 8

Pressure in chouse of the service of emperatures are as follows:

The friction in the stove was not estim

tical importance, for estimating the lose of head when on gas. The resistance to the blast is so small as to be of little moment in practice, yet sinis same friction on draft is of the atmost imas in no ease have the observations of the blast been sufficiently close to establish data of prec-

veloped by its practical combustion, comparing this with the heat carried away by the blast as by knowing the analysis, calculating the heat deservations were, however, quite unsatisfactory. The flow of gas must, therefore, be approximated lyzing the inflowing and escaping gases. The obpassing through one of these stoves was at tempted to be determined when it was doing its utmost, by measuring the air-flow and ana-To establish this correctly, the volume of gas

a correction, and accurately observing the draft-head at various points during known duty, measured by the blast heat,

feet high, was carefully observed for many days with this object in view, and reducing these observations to a practical standard, they A plant of stoves, 20 feet diameter and 60

Blast hear to stower to the store of the sto :awollol as erew

put on the market that have had some value Many different kinds of material have been steliod to synchrone and owners of bilow Average composition of gases by weight, CO2, 13.44; CO, 26.25; N, 60.31.

schools of that city. The new system will in-clude carpenter work, or the use of wood-work-ing tools tion, after a careful investigation in Europe, have resolved to introduce it into the public rapidly becoming a matter of general interest, and is being adopted in many of our cities and large towns. The New York Board or Educa-Мамиль Тванина in common schools is

which the company agrees to pay him \$30,000 Diego, the beach company is about closing a contract with J. D. Schuyler, by the terms of AT Coronado beach, opposite the city of San

positively that the oil-producers in Pennsylva-REDUCING THE OIL PRODUCT,-It is stated if, after sinking a shaft 3000 feet, he shall strike water, gas, or oil. If he tails in this distance to find any of these fluids he is to receive

pelond requirements. vieness," with an excess of 20,000 barrels daily drilling in the oil regions, competition having reduced prices until "there is nothing in the lo noisnequa lareneg a noqu beerga evad ain

tinnally washing them sahore. In some places, the dead dark is too teep and several feet in covered with dead sardines, and the sea is con-THE shores of San Luis Obispo bay, especial-ly below Port Harford and Cape Landing, are

> further before he could extricate binneelf. It dumped down a distance of 12 feet. He was down the flume 75 yards with the debris and There was organized in this oity some times. The Pioneer Miners is the object of which, as the object of which which which which which which which we was the object of which which which which which we was the object of which which which which we was the object of which which which which which we was the object of which which which which we was the object of which which which which which we was the object of which which which which we was the object of which which which which which we was the object of which which which which we was the object of which which which we was the object of which which which we was the object of which which which which which which which we was the object of which whi

### Utilizing the Enoalyptus.

markets. Their shipments to Europe this year were double what they were last year. There does not seem to be any doubt from absmalk lo stesorol surgiques egael edT quaquoo a yd nwob tuo gaind era vytunoo ol sevest edt mori gaintstalmam era odw lo esoyung esit vol bind a est surgiquesue edt

their fluid on this market, as well as in foreign scale-remover from the encelyptus tree, seem to have met with great success in introducing Company of this city, who own the patent rights in all countries for the manufacture of The Downie Boiler Incrustation Preventive with trees raised from seeds imported from Australia, where the trees are indigenous. torests were planted out about 10 years ago emoving scale from steam boilers.

Whatever his misfortunes or however he

with this class of men, should not be overof dependence, a matter that, in dealing a to mid evelier the could estimate an ordinary and the mid evelier blinow trougue a world reliable of the mid evelies a sometime a sometime to the source of the mid evelies of the mid

would more than earn their living. So placing

his disability, would still prefer an active to a wholly idle or listless life, With land attached to the cetablishment, many of the immates

may be compelled at last to look to others for assistance, the miner never loses his self-respect or pride of character. However lowly

tantly being disabled through disease, or worn character. It sometimes he has shown himself in the constitution of the constit with the shirk, the tramp or other worthless necessarily possess many sterling qualities, so many that he should in no event be classed formed so much hard and useful work must has led makes this so. The man who has perlast spark of hope has died out, The life he oul the sentiment of manhood even after the sid ai evila ageed eatlated a bevreab and ed or needy his condition, the consciousness that

populous maining centrate auree auree propulous maining centrate in a survey possible to make aure per their always possible to make auree their always possible to make auree their always possible to make much their always possible to make aureed, is at beat of men.

In the beat of men.

In the favor with which this fluid has been anch as should gain lead to a supply the want which has for so of some are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are indemnity or their solvency. Each of the men are the

DIAGRAM OF THE PIPING OF A BLAST FURNACE.

### Mining Accidents.

ti nedw rebwoq tnaig to egrade a gniqmat saw badly mutilated on Tuesday of this week George Roe of Georgetown, M. M., employed by the Standard Milling Company, at Lords-burg, had both arms blown off and his body

exploded. It is not thought he can recover.

breaking one or more ribs and injuring bir more or less intensally. The accident occurred in the same manner and in shout the same place then squeezed between the car and a timber, tion. He was dragged a short distance and ised partially regained an apright posidown, but by a supreme effort he seized one of car struck him in the back and knocked him duties in the incline section of the shaft. The Nevada county. Roberts is a pumpman, and at the time of the accident was engaged in his A descending car, unexpected, very nearly snapped John Roberts' thread of life on Thursday of last week in the Idaho mine,

or Josiah Palamountain several months since. in the mine as that which resulted in the death

day a " boom," or large body of water, is turned G. A. Tederman, one of the parties engaged in sluicing at Dutch Hill, Plumas county, came very nearly losing his life, and in a peculiar term on the came of the state of the

ensetments, found in each one or more Miners' into the cut where the ground-sluicing is being Ir is state. Homes, open to all deserving applicants? As done. When this is done, a large mass of been strucks applie burden the maintenance of such as water, gravel and earth go headlong through land, Nev. eral mining States and Territories, by suitable ensetments, found in each one or more Miners' Homes, open to all deserving applicants? As bluode as of the work of the w How or by whom the provision here suggested esinaqmoo sonanies.

prove such an undesirable client with the life

tionally larger than in Great Britain or other European countries. With such data before them, it is not strange that the miner should

egraf yllaupe anoiger gainim rehto ni era seidla reproper gaine gaine bain latal a lo esott

greater or less severity meantime. These casu-

much larger number that receive injuries of

the mines of Great Britain, more than 1000 lose their lives every year, this being apart from the

pazards that wait on the miner's life may be inferred from the fact that, of the employes in

become his own insurer. Something of the

pelling those prudent people to charge such ex-cessive rates for guaranteeing either his limb or his life as makes it economical for him to

oident ingurance company for a policy, he finds himself practically debarred from their bene-fits, the dangers incident to his calling com-

If the provident miner apply to a life or ac-

precarious and uncertain,

-nistnism yltnensmraq bas egraf ta ylno be

bas besinagro ed as nd benevolent purpose But this cannot always be done. Miners' asso-cistions for protective

ences of such injury.

es this is practicable, each same of the conservation of the conse

secure himself, so isr

ught to take measures It is true, the man so exposed to be injured

eldsbiovann trag tec bject of charity are, in soft

endered helpless and

bich the miner may be agencies through etaald betoegnaan saiv versture or other-

o seof entire to then file of second descriptions of the second of the s

on through the impair.

-ibnoo fulitiq eail s. , be mis m ylsseleges benebere sre reduced оше эте by япсь свиве constomed vocation. rieds to Zaivid a gaiara

в могеру

des the considerable number who are con-

laes of miners who, from old age, accident, or ther canse, may need its fostering care ? Be-

te sime to take in and care for all and every

ni nguone gaideser-rea far oitettaga mittatisu

seed by this or some similar organization. Why should there not be planted somewhere an

s, cover all the objects that ought to be comes alveady a large and respectable membership, or most commendable, they do not, it seems to

nemborably a person must have lived at least ix months in a mining district in California nior to the let day of January, 1860. While the purposes of this association, which

nformation relative to the early settlement and or past history of the State. To be eligible to

brary and cabinet, and collect and preserve coollections of early days, create a charitable and for the benefit of its members, form a

cial intercourse, renew the friendships and

constion of California," the object of which, as to forth in its constitution, being to cultivate

Is a stated that a large body of rich ore has Butte, Montana, mines. THE Granica Mountain mine paid a \$200,000 dividend last week, and on the 15th the Drumtonnon paid a \$247,000 dividend. Both are

been struck in Henry Welland's mine at High-

nificent specimens of almost entirely pure gold as large as a man's hand.

oer of St. Louis and Louis Blaubier of the Brit-ish Northwest Territory with a tin box full of nuggets of native gold, including some mag-

the trom Duluth (Minn), dated to the 25th, ages in the rear the first seed that of good rear the terminal that of the transform of the transfo

GOLD IN THE BRITISH MORTHWEST.-A dis-

Risdon Iron Works; slee many

steamship lines, foundries, mines, mills, etc.

Navy, Pacific Coast S. S. Co., Market, Sutter, Geary and California street cable railway

S .U edt ni eeu ni ei biuft tedt taat vaeq

Downie Boiler Incrustation Preventive Com

We find by the pamphlet published by the

form success as encelyptus on all kinds of scale.

remover, but none have ever met with such uni-

and have met with some success as a scale-

esnedxe bas elduort testest riedt 10

Electricity from Heat.

be but very slightly affected. If at the first of the but very slightly affected, a reflected image of the sun, or a reflected light of an electric lamp be viewed through it, the image will be seen aurounded by an intensely luminous bine or greenish light. These investigations may be said to be the latest, as they are also the most interesting and complete, yet made in this direction.

## Beientifie Progress.

### Psychic. Тре Тргее Forces—Physical, Vital and

[NUMBER IO.]

[Written for the Pages.]

Two modes of motion are possessed by the modes of motion are possessed by the mollusk type, swimming and creeping. The fin-like expansion of their body draws them fin-like expansion of their toom between the arm membranes forces them backward. Creeping motion is gained in some by a developing motion is gained in semistance which motion is disk is also an assistance highest mollusk was incapable of a land resinity statement in capturing food. We have seen that the highest mollusk was incapable of a land resined for a land residence, though having source sense organs. A familiar example of the mollusk, as fitted for a land residence, is the The latest American invention has found, an English claimant, as witness the following to the editor of Engineering, London:

"Say. In your issue of September 9th you give some particulars of a new method of generating electricity direct from heat by Mr. Editerating electricity direct from reading it I was rather agency from the manufacture of the man

### Common Snall

And its relation, the slug. These belong to the And its relation, the slug. These belong to the division Gasteropoda (stomach-footed), an expansion of the stomach musoles serving as the free ping foot. They are classed Fuknonuks from their having lungs; these lungs are very simple in form. A valvular opening, with cit-cular muscle in the neck, leads to a network of blood-vessels contained in a small sac. A nethborhood where rain and moisture abound is their favorite habitat. Among the mollusts, is their favorite habits are air-breathing, and some only the true snails are air-breathing, and some only the true snails are air-breathing, and some only the true snails are air-breathing, and some of the state of the

We have, says Professor Fairohild, "a clear Wy baye, "as of professor Fairohild, "a clear was a fair by the identity in principle of all marker respiration, for in the Lywraca, the sad, which is the early stages breakles water shores, can addenly change to a lung, and thereafter presents only air; and in specimens adult animal. The Ampullarice have the abult animal. The Ampullarice have the breather, or gill-cavity, using first one and then the other, or gill-cavity, using first one and then the other, or presthing air miretes. The breathing organs of a true snail are similar to those of a spider, concentrated into a single sac. The sea anails, having shells, carry the breathing organs of a true snail are similar to those of a spider, concentrated into a single sac. The sea anails, having shells, carry the breathing organs of a carry the organic single sac. The sea anails, having shells, carry the creature to burrow in the sand and still obtion was the organic of a more and a single of the common bard clam is an example. The common bard clam is an example. The slone. as on ot America. Our seature; the was a limest identically to the medical factors in a static in a set of in a that; it was a limest identicially of the deavy cost of a British patent, which is about 10 for 14 years, I would have some six years since patented the first practical method is about for the beavy cost of a British plan, and thus for the practical and thus have a since patented the first practical and thus have a since patent as a power producer by the atlantast of first publication for America.

"I developed both an electric producer and connectors between the did angules and the appart, are appared to first producer by the alternate bearing and the connectors between the did magnet and the to 1000 times per minute, and, by using the transfersh are appable of exchanging heat from 600 connectors between the did magnet and the follow from the hot connectors to the cool one; there of the cool one; there is a permanent on ear terms an induced one trom the alternate and an induced one trom the electricity produced as induced one trom the best price as in induced one trom the electricity produced one."

In the coils, I had also a continuous rotating one."

One." Pond Snails

one. "Another correspondent of the sonies rotating one one." Another correspondent of the same journal Another correspondent of the same journal criticises the invention as follows: "It is impossible not to be struck which the ingenuity and originality of Mr. Edison's invention, but when we come to appraise its practical value, the recollection of the hote regime, at which the recollection of the hote has a will be a will be the statement of th belongs to the

### Lamellebranchiata

Coun Drythot.—A blacksmith at Haywards, according to the Haywards, long Drythot.—A blacksmith at Haywards according to the Haywards Journal, has demiconstrated that a blast of cold sit is just as effective in drying fruit as a hot blast. His exports.

Incelly back of the room occupied by the forge. Directly back of the room occupied by the forge is another apartment, which is used the vide duscd in the lor drying fruit. The cold blast comes from the blacksmith's furnit. The cold blast comes from the blacksmith's furnite. The fruit is placed on traying fruit. The cold blast connection of the cold in the blacksmith's furnited on. The fruit is placed on air blacksmith's furnited on. The fruit is placed on air blacksmith's furnited and the fruit is placed on sompletely dried. Samples of promed to be and applies are shown which were dried two part of the State of preservation. People in this a perfect state of preservation. People in this apart of the State are very generally familiar with the great evaporating power of our cold suttend north winds. (Plate gills), as does the oyster, etc. T. Kymer consider the consider of the consideration of th

oning upon the entrace sociation the state of the lowactivity."

Some sea-anails, the sea-spiders, and the lowest crustaccans respire by the skin alone. This
reminds us of the amoebs, in whose structureless body the constant change brings every part
immediate constant change brings every part
immediate contact with the surrounding water.
Among the higher animals the leech and the
structure of the surrounding water.
Among the higher surimals the seather through
their stain. In the Polyps and Articulates,
their stain. The Longitudinal Form

EXPERIMENTS WITH FOG.—The experiments and Macestry, extended by and Macestry, extended by Aith. M. Coulier and Macestry, extended by Aith. Day demonstrated that in a perfectly moist air is absolutely free from dust, and lond that are not necessary as a long state of the air, a sufficiently moist, is obarged with the more air, sufficiently moist, is obarged with mation of fog under a sufficient lowering of the more att, sufficient lowering of the mation of fog under a sufficient lowering of the macion of fog under a sufficient lowering of the presente diminished, then only a fews particles of fog will reveal themselves to the most care. Presente diminished, then only a few particles of fog will fight of an electric lamp—particles of its which more are now admitted into this different horse or now admitted into this different air, so now or allimeters of ordinary house air, which allow for a work or different air a great or dise of dust, a very fine, allevery, transparent fog will at once form itself, of such alight derricles of the standard states of the transparent site, of such alight derriched the transparent of the first considerable area of the transparent of the standard states of it, the case of a considerable area of the transparent of the standard states of it, the case of a considerable area of the considerable area of the transparent of the standard states of the standa Geems to have been attained by the joining toSeems to have been attained by the joining together of a number of animals. A colony, originally compound, becomes, by a simple structain of innetions, equivalent to a simple structin the lower types. It becomes a bons-fide
are in the lower types. It becomes a bons-fide
been named by Trofessor Perrier of Paris the
law of association, the process by which it
law of association, the process by which it
works—the transformation of scoleties into
individuals; of which in our next.

(To be Continued.) The Longitudinal Form

determine north winds, being authum north winds, charten and the studies of Yesterday. With all his pride at our progress, the theoughtil student beholds with dismay the rapid sweeping sway of many animal and vegetable species which to future science would be most precious. In his biological address to the British Association, Prof. A. Newton lamented, as an example of what is being done, the disappearance of the birds of New Zesland. In the more thickly brids of New Zesland. In the more thickly be seen, while the natives are fast being pushed to seen, while the natives are last being pushed country, and supply a link with the past that content ones lost can never be recovered. The forms of life that are being killed off are mostly the ancient ones, that must teach us more than the secent ones of the way life has been spread over the globe, and Prof. Newton therefore over have have in gaining all possible knowledge of these ortestures belone the knowledge of the second us are never than the nation of the second of the way life has been spread only these ortestures belone therefore a past of the way life has been spread of the second us more than the second of the last of the graph and the second of the way.

I when the globe, and Prof. Newton therefore these of the way life has been spread of the way.

A TYGEOMETRIC PAINTING.—A weather programation of the program of the properties of t

to shinders, and others placed in front of these as by Jinders, and others placed in front of both of both such size or of both of both and low presente or of both such cases are provided for using steam direct trom the boiler to vided for using steam direct dispensing with the use of the ligh-presente oylinders, then of the bigh-presente oylinders whosever so desired by the engineer, thus making it, in effect, either a simple or compound locomotive at will.

### Pure Aluminum by a New Process.

A patent has recently been granted to three franchmen for the extraction of aluminum for a large of the complex of a large of the extraction of aluminum such a sulphide of carbon and heat. Aluminous carbon is oxide by the combined action of carbon, all oper cent by weight of powdered alumina with a sulphide of carbo by weight of powdered alumina with a lampblack; to this mixture is added a sufficient of quantity of any of in the sulphide of the sate of carbon in a closed or sasel capable of standing a high temperature, and is actioned to clambing a high temperature, and is actioned to carbon into the carbon in a closed vessel capable of the conferent mass of aluminous pieces. The pieces are placed in a closed vessel of the complete, and the capable of aluminous produced. The "sulphuret of carbon into the capable of the

\$4 per pound of the aluminum contained,

\$2EAM BELL, RINGEES, —Steam bell-ringers,
which are reported as growing in popularity,
which are reported as growing in popularity,
as astegrard to railroad employes, and all perand read-beds of the many and rapidly-increasand read-beds of the many and rapidly-increasand read-beds of the many and rapidly-increasing railroad lines of this country. The latest
design of steam bell-ringers is very original and
design of steam bell-ringers is very original and
design of steam bell-ringers is very original and
and is patented in all countries. It consists of
and is patented in all countries. It consists of
townward. Inside of this bell its aeonond shell
with a cavity in which the steam gredually collocts as it seespes through a small opening, the
ing being varied by a valve in the cab. On top
tree bell is mounted a clapper which extends
is attached the cover to the inner cavity, which
over is raised when the steam pressure is raised
which is the clapper
which is the clapper.
When the steam escapes the cover falls, and
with it the clapper, thus striking the clapper.
When the steam escapes the cover falls, and
with it the clapper, thus striking the bell.

and MARD ALLOY FOR BEASS.—Great hardness and ductility may be given to red brases, with and the bring recourse to phosphor bronze, by and ductility may be given to red brases, with mixing in with the other metals a small quantity of tecen bothle glass. To this end a pound of mixing in with the class. To be added, say to a 50-pound crucible class, to be added, say to a 50-pound crucible charge, or two per cent, care the other metals are on the top. The brase obther whole quantity of the crucible, while the other metals are on the top. The brase obther with a screedingly hard, and is not essily worked, but the alloy is valuable as a mixing other metals are on the top. The brases obvinge, things, etc., can be used up with a doubt of the above alloy is to be making other which can be one of the cant of oxide of manganese should be mixed with the metal to be melted. All sorts of brase made with this alloy are very liquid of brase made with this alloy are very liquid most an impossibility when castings become alloy is used, by the contract and impossibility when the alloy is used, of manganese should be most an impossibility when the alloy is used, even when oast in green sand.

MORE PREVENTION OF BOILER INCRUSTATION.

What is easid to be another improved liquid for preventing and removing incurate thouse steam boilers has been invented by Mr. W. G. Card, of Dunstable, Brgland. It has been found in practice that good results are obtained by taking, say one ton of waste leather, and boiling if in about 1000 gallone of water, to my proportionate quantity of carbonate of soda is proportionate quantity of carbonate of soda is utility be leather waste becomes soft and elsar until the leather waste becomes soft and elsar until the leather waste becomes soft and elsar until the leather waste becomes soft and elsar it, and the process is then complete, and the liquid (standard).

Preson Frierrow.—Experiment has shown that the frietion of ordinary pietons and plunger may be estimated at about one-tenth of the amount of the effective pressure exerted by the fluid on the pieton.

MECHANIGAL PROGRESS.

An Improved Grindstone.

For some the property of the p

CORROSION OF METALS IN MINE WATERS.—
The Boniisolous Coal Mining Co., in Westplais, Germany, having much trouble from the acid waters quickly correding the iron and steel of their underground machinery, made a series of experiments with a view to finding the relative corresion of metals of suitable strength. Breas and gun metals at set, iron and conugh, and trials were made of satong the strength. Breas and gun metals at set set strength. Rolled bars of each of strong Delta metal. Rolled bars of each of strong Expansion of art made and a half more bars.

Erray, and then carefully reweighed and photomarks and the mater of the price of the strong fraphed. The bars were of 7.5 inch long, and had a sectional area of 0.62 aquare inch. The following were the weights of the three kinds following were the weights of the three kinds of bars before and after the trial:

Wrought Steel metals.

Weight of parameter the tribit.

Tought with the relation of the control of the c

THE AREAS OF PIFES,—Comparatively flow persons are aware that the aircle, a circle, or a pipe with an area equal to that of any two other ones, may be found by means of nothing but the equate correct of a board and a rule, without the aid of any calculation. The process elects on two edges of the board and measuring diagonally from one to the other. It a carpenter is equate or more to the other. It a carpenter is equated in the process is reduced to one, any two of them may be converted into one, are three or more pipes to be led into one, any two of them may be converted into the single diagonal measurement. In case the simple diagonal measurement, in case the simple diagonal measurement, in case the simple diagonal measurement, and each one, and this one may be added to the other. Doubling the diameter of a pipe to the other. Doubling the diameter of a pipe increases its capacity four times. The capacity of pipes is as the square of their diameters.

A New Conpound Locomorrye,—The master mechanic of the lows Central railroad, Mr. John Player, has devised a new compound loop motive which is said to give considerable promise of success. The cylinders of an ordipromise of success.

interpretation at least, may well be set down munity.

One other person—a physician of the down test of these in this enlightened age and comeating of the person—a physician of undonbted standing—was also severely attacked by his medical brethren on the same score for a similar effort in beball of humanity and soil control, he promptly set down and wrote on the same score to the control of the San Francisco City and his resignations to the offices I see offices to the offices I see offices and to the set of the same line of investigations in this laudable direction.

County Michael San Francisco City and his meaning the same line of investigations or discontinue his investigations, or strength of the same line of investigations or discontinue his investigations. It is to be hoped that the discontinue his investigation, in the series of the set of

SPINAL MARKES,—Onlidren are peculiarly a configurably a configurable spinal and the spinal spin which the spinal liable to those aliments in which the spinal nerves or base of the brain are more or less involved. In view of that which has gone before to the constant and the protects of principle of which the professor of the presence of the presenc

compassed.—Exbynood Magazane.

Gloarertes and Everiour.—The greatest enemy to the eyes of young men is the orgerette.

Recently a disease has appeared among smokthich is dangerous, and after careful investigation the best of authorities, who for a long time were at a loss to understand the peculiar malady, have traced it to the small paper-cover the continue of the constant of the continue of th

DISINVECTING THE HANDS.—The question, "How shall the medical practitioner distincts binds," which has been often discussed, seems to have been completely and astisfactorily and beyong the discussed, seems to have been completely and astisfactorily and severed by Dr. Foster of Amsterdam, who has made some careful research bearing upon the question, and who sesserts that the only absorpated by Pir. Kooh of Berlin, which consists in a soblutely reliable preparation is that recommended by Dr. Rollings of the proportion of from 7 to 15 grains in two pints of distilled from 3 to 15 grains in two pints of distilled from 3 to 15 grains in two pints of distilled from 3 to 15 grains in two pints of distilled in the proposes and unquestionable prophylactic qualities of this distilled agencially will go far to recommend it with surinfectant will go far to recommend it with surinfectant will general practitioner.—The Medical Register.

of 200 tone per day, In France and other continental nations, the business is large and Corloiness. Jules Chagotolia of France and Carlo Eaggio of Italy have each increased their plants till now they have evenly capecity of nearly 350,000 tons each. Other tirns have also gone into the trace largely. The business is likely to get a start in this country soon, says the Cincinnati Avisan. Fittsburg parties analyzed Cincinnati Avisan. Pittsburg parties analyzed purity and power. Here, where coal dust costs purity and power. Here, where coal dust costs nothing, the profits of irrited brings, the profits of irrited profits of irrice nothings, the profits of irrited parties analyzed business.

Database of the properties of the properties of the present of the properties of the

CULLUVERT.—A new material, termed culluvert, is now made by passing paper, or any vort, is now made by passing paper, or nitro solutions attaces so produced are then pressed together and washed, when they form a very tongh and hard substance, need in the industrial arts.

CHIMMEY FOUNDATIONS,—The foundation of a chimney is no place in which to get rid of all the bats and other refuse bricks that may have accumulated. It is aste to watch the builders rery closely and see that they do not put that kind of material in the chimneys they are building for you.

Garazen Bricks,—Enameled or glazed bricks, for outside or interior decoration, are made by applying to the surface a flux, which, during the burning, causes the silex to melt and form a vitreous covering. Such flux is easily colored, and thus very heautiful fancy bricks produced.

THE United States produced 28 per cent (more than one-fourth) of the world's production of pig incert (more than one-third) of the world's production of steel in the same were

Hallway Cars.—There are about 900,000 or relivery care in the United States and over 26,-

## GOOD MEALTH,

### Death Rate in California.

The monthly circular of the State Board of Health for September contains reports from 62 wars, or the State Board of September contains reports from 63 wars, aggregating a mortality of 195 in an estail centage of 1.24 deaths per 1000 for the month, or an annual rate of 1.485. The report asystem wonderly all salbrity of our climate. For instance, we will take the month of August: our stance, we will take the month of August: our stance, we will take the month of August: our stance, we will take the month of August: our stance, we will take the month of Lagust: our stance, we will take the month of Lagust: our stance of the st

the states, this state being semarably free from that Maxwall Blank and developed the semantal managed, which have a self-been considered by the causes of death, and the semantal managed secured by the causes of death, and the semantal managed secured by the state of the semantal managed secured by the semantal secured by the secur

## USEFUL INFORMATION,

### How to Act at a Fire.

In a lecture before the Society of Arts, Londou, Mr. A. W. C. Gheen gave the delowing
cocurrence of fires. Fire requires air; thereoccurrence of fires. Fire requires air; thereflows, an its appearence every eflorts about the
made to exclude air—abut all doors and simple directions how to act on the
made to exclude air—abut all doors and windows. By this means from may be conflued to a
migle room for autificient period to enable all
the doors and wind and the draught will instanting of the wind and the draught will instanting of the wind and the draught will ingotten that the most precious moments are at
the commencement of a fire, and not a single
commencement of a fire, and not a single
gotten that the most precious moments are at
the commencement of a fire, and not a single
second of time should be lost in tackfling the
action at the cost or anything
the commencement of a fire, and a cost or anything
another a large sheet of flame, and a cushing
another a large sheet of flame, and a cushin
another a large sheet of flame, any traces
and thought. In all large houses, buckets of
little saft being put into the water. Always
another should be placed on every landing, a
fittle saft being put into the water.
Always
and thought, In all large houses, buckets of
little saft being put into the water.
Always
and thought, In all large houses, buckets of
anot stringulah after, but in to water the
oct or should a fire body will ense
and wrapped around the body will ense
to shut the door when making good your
the midst of muon date of the wind will
be midst of muon and the will over the
one of none if it is only a desired
putered, wrapped dightly round will enselve the
preferred) wrapped dightly round will enselve the
and wrapped around the body will enselve the sore
the midst of muon and the first possible in
be more at at once its only a captured by the wind to the winter of or every
and its found to be removed the complete,
anixture of equal parting the cure is complete,
anixture of equal partition of treash

LOSS BY SMOKE.—The investigations of a society formed in London to ababe the smoke ciety formed in London to ababe the smoke ciety formed in London to ababe the smoke mulisance afford a rather startling idea of the mosent system of combustion. Here is a summary of a late recombustion, Here is a summary of a late repeated of the smoke choid over the city is eavaying the carbonic oxide special or the smoke choid over the city is easier. From actual feets, the value of coalon and carbonic oxide sees, the value of coalon and carbonic oxide musly wasted through the obstinacy of the amount and the coal of the carbonic oxide and the coal in London and the special of the straing such a coal in London. The special of the carbonic oxide a special of \$215,000 to be cometrated of the such a special of \$215,000 to be compared to the straing such a sheet should be cause a use in there is shown a total of \$215,000 to be preparty from the smoke-lades atmosphere, about \$12,500,000 is yearly thrown away in London. Add to this \$10,000,000 for injury to property from the smoke-lades atmosphere, and there is shown a total of \$22,500,000,000 is yearly thrown away in London. Add to this \$10,000,000 for injury to property from the smoke-lades atmosphere, and there is shown a total of \$22,500,000,000 was and bearers and start of the seen atmosphere or the start of the start of the seen atmosphere, and there is shown a total of \$22,500,000,000 was a should be prevented by a general adoption of improved methods of constructing chimneys, fireplaces, furnaces and beaters."

FIRES IN STORAGE WAREHOUSES.—In speak-

Three in Storage Warehouses,—In speak, ing of the danger of fire in turniture storage calls attended and very finance journal ageorge in the danger of the in turniture storage stored in and quantities in these buildings, abord in and quantities in these buildings, about a factory, it says, "finds gressy rage about a factory, it says, "finds gressy rage about a factory, he immediately makes a note presence of the little incondinates that the very promises never to have another and shout the presence of the little incondinates that the wine to be very dangerous; they will condemn alphace over night stain. Cressy rage sne known to be very dangerous; they will condemn alphace of the little incondinates are greasy rage, in the form of light furniture, what wonder is not the will be an any place of the worst edge. The stand wall covered over with kindling wood in the order is and whe have a many of the worst edge. The stand wall covered over with kindling wood in the worst of the worst edge.

THE FAY FALM.—Rev. B. C. Henry states that the fan palm of China grows only in the San Ui district, 20 miles long by 10 miles wide.

The trees do not yield leaves suitable for fans until six years old. Some trees are said to be over 100 years old. Some trees are said to be over 100 years old, but the tallest measure only about 12 feet. From April to November the leaves are cut monthly, from one to three to being taken from each plant, From 10,000 to 20,000 people are employed.

Cont. Dust Fuer. —Briquettes or fael bricks from coal dust are growing in favor and defended and in factors. Bookland in the the ranks of briquette-mating nations. The factors and pig-iron-making from there is now erecting a plant with a capacity.

Utah's Ore-Producers.

ing interests of the Territory, convened at the Chamber of Commerce rooms last evening. The attendance was quite large, including most of the beaviest mine-owners and ore-handlers in the city. The second meeting, says the Salt Lake Trit.

The second meeting, says the Salt Lake Trit.

was, of the Usah ore-producers, who have been working constantly of late for the organization of an association for the protection of the min-set in the protection of the protection of the protection.

The meeting was called to order by the tem-file offy.

The meeting was called to order by the teer the porary chairman, J. E. Dooly, and after the resport of the minutes on Organization.

The report was presented and after some dis-cussion on the eilver clause, and some amend-ments, the report was adopted as follows:

The Report Was adopted as follows:

The Report.

Ve, the undersigned, residents of Utah, and deeply intercested in her prosperity and particularly intercested in her prosperity and particularly intercested in the advancement and properties into an association to be called the Utah Ore-Producers' Association.

Its object shall be the better protection of ore-producers and the advancement of the minimal producers and the advancement of the minimal intercests of Utah. In pursuance of this, we piedge ourselves:

I. To stand together and support our mutual intercests.

ing interests of Utah. In parsanace of this, we pledge ourselves:

1. To stand together and support our mutual in a district the same of the partonize such reductions were as will meet us on fair terms, half-way, tween the miner and smelter, so we may obtain the atlants of the profits of our ores.

3. We pledge our support to independent as a miner and anelter, so we may obtain the anner and smelter, so we may obtain the anner and anelter, so we may obtain the anner and anelter, so we may obtain the anner and anelter and anelter and anelter and anelter and anelter and anelter and which adjusts its rates in a sampler and assayers

4. We pledge our support the miner and anelter and being considered—with the miner and anelter one our ones and bing the place and which adjusts its continuous and the continuous and the place our best endeavors, in conjunction and states, to ward off the legislation which and states, to ward off the legislation which and states to place lead ores on the tree list, and states to extend the coinage to the maximum and states, to ward off the legislation which allowed to expect the cour best endeavors, in conjunction and states to expect to order and action the interests of the assacration of the allowed the court of the saron connection to the interests of the assacration and the contract and and states and a state our best on the same before the country a knowledge of the massarreless mineral interests of the research of the interests of the operation and the organization.

5. In case on tair region, and streament of the investible of the casting works for the massarreles minerally and and one of the interest of the casting works for the manner of capital and the organization and the committee of the and actions of the sacontive committee.

6. The offers and prepare and may and the executive our interests and have the executive our interest of the and prepared our and prepared out and prepared out and prepared out and p

The treasurer shall keep the moneys of the association and distribute them on the order of the president or vice-president, countersigned the president or vice-president, countersigned by the secretary.

The executive committee shall make terms with smelters and relicoats; shall gather information regarding the Territory and the business of mining; shall, in short, be the working force of the association in any important contract without the association in any important contract without the approval of the majority of the memorial of the secons approval of the majority of the memorial of the secons of the memorial of the secons of the memorial of the memorial of the secons of the memorial of the memorial of the secons of the secons of the memorial of the memorial of the secons of the memorial of the memorial of the secons of the memorial of the memorial of the secons of the memorial of the memorial of the memorial of the secons of the memorial of the memorial of the secons of the memorial of the memorial of the secons of the memorial of the memorial of the secons of the secons of the memorial of the memorial of the secons of the memorial of the memorial of the memorial of the secons of t

association.

9. The association may at any meeting, by a majority vote, change or add to these atticles,

articles.

There was but little talk in the meeting, the configuration of original varieties of in the describing verificated was then proceeded approval.

The election of officers was then proceeded with, and resulted as follows:

President, W. F. Lames; vice-president, J. B. Dooly; secretary, W. G. Van Horne; treasmer, W. F. Colton,

Is composed of the following-named prominent mining men: C. E. Mitchener, W. F. James, J. E. Doolty, L. U. Colbath, A. Neidringhaus, Harry Duke, J. Q. Packard, Hank Smith, E. B. Wan Dueen, M. M. Kaighn and W. G. Van Horne. The Executive Committee

E. K. van Dusen, w. m. Programmittee Van Horne.

It was agreed that the executive committee should confer with Manager Potter of the Union Pacific, and other relitoned magnates ex-pected here shortly, upon the question of ship-ping rates, etc.

the main road loss also been constructed leading from the main road to the mine. This mine is supernitended by Joseph Arrowsmith.

The WHAT CHEER MINE.—Since the reopening of the What Cheer mine under the sble managennent of the What Cheer mine under the sble managennent of the What Cheer mine under the sble managennent of the What Cheer mine under the sble managennent of the What Cheer mine under the sble managennent of the what Cheer mains when she was an old main tunnel, which made hoisting very slow and be defined and managenness of the water to run be contained and the stating in the old ment and the stating in the old ment and the stating in the cheer of contained so the stating in the stating the old ment and the stating in the stating stating and the stating in the cheer of contained so the stating in the stating stating a part of the water of the water of the water of well and the stating in the stating stating a braining the carlow of which stating in the contained of the water of the water which may only to income of the water which may contain the stating in the stating in the stating in the stating in the stating stating as a stating the stating in the stating in the stating with the spump the mine can be sell in the column the stating in the stating stating as a stating the stating stating stating as a stating the stating in the stating stating stating stating stating stating and the stating stating stating stating and the stating s

A. & B. MINE,—Calaversa Chronicle, Oct, as:
The A. & B. Mine,—Calaversa Chronicle, Oct, as:
The A. & B. mine is situated about three miles west
from fown in Poor Man's guleh. An incline tunnel
3 feet in as is being run to leap the main channel, it
is expected, at a distance of about 1000 feet; at presing works have been erected, run by water-power,
ing works have been erected, run by water-power,
of a residence for the superintendent have been built.
A new 10ad has also been constructed leading from
a treated to the mine. This mine is superintendthe main road to the mine. This mine is superintendthe main road to the mine.
The Whart Cheer Mine.—Since the reopening

TUNNEL.—The company owning the Jackrabbit mine near Altaville have commenced to run a tunnel raco feet through a gravel hill to tap the Union water ditch, to get water to run the hoisting works at the mine.

Oslavores.

Chlorinariou Works.—San Andreas Prospect,
Oct. 2st. The chlorination works at Angels commenced operations last Monday on sulphureis from the Nevels mine. All the other mines in that vicinity are saving the sulphureis and it is calculated that the works will be kept running steadily for some time.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

MINING BUMMARY.

CALIFORNIA.

DELHI.—Morth San Juan Times, Oct. 21: News comes from the Delhi mine to the effect that richer rock than ever has been struck and that the next cleanup will be enormous. Every effort is being cleanup will be enormous. Every effort is being made to have the ten additional stamps in operamon Pythogenery and next month.

ORMONDE.—Cor. Newada Tvanscript, Oct. 22: The object and only the first of next month.

The Blue Jay quarts ledge is about a half mile property are principally residents of Blue Tent. They have true a tunnel in on the ledge a distance of property are principally residents of Blue Tent. They have run a tunnel in on the ledge a distance of 200 ledge. The vein of ore is from as to 6 ledge wide, all good entilling rock which shows tion the dump about to ore A patent has been obtained for the cours of ore. A patent has been obtained for the ground. M. A. Baugh is the superintendent.

Nevada. FREMOUT ESTATE.—Mathposa Gazetle, Oct. 223.

The Fremont Estate Mining Co. is erecting a fine stable in Best walley. Other improvements in the valley will take a start as soon, probably, as immber van be obtained and the people are satisfied that the people are satisfied that the company will increase their forces at the mines and make perational improvements. Extending mines and make perational improvements. Extending mines and make perational mines of the company soon out in the early spring. Our reporter, who was prospectors at Mount Ophir and Princeton have prospectors at Mount Ophir and Princeton have prospectors at Mount Ophir and Princeton have reach distend over their success. Best valley sites and were contractly begins to show signs of improvement and better times.

DEFIANCE,—Inyo Independent, Oct. 22: During the past two weeks ore has been taken out of the past two weeks ore has been too in gold, soo ounces per ton in silver and 40 per ton in gold, soo ounces per ton in silver and 40 per ton in gold, soo ounces per ton in silver and 40 per ton in gold. The Defiance is showing np as a fine mine.

DORLY.

A RUH STRIKE.—The new shaft at the Utica mine in this place is nearly completed, all that is mine in this place is nearly completed, all that is ramp. The shaft has been sunk in good ore for quite a depth, and at the very bottom it is said to be immensely rich, being nearly a solid mass of rich aupburet. The owners are quite jobilant over the subburet. The owners are quite jobilant over the into strike, which is without doubt the richest made in this town in many years.

mingly and we anticipate good results in the near future.

Mokelumne Hill.,—Angels £6,60, Oct, 20: We were informed one day last week that business is rejected to work in sively in Mokelumne Hill., and that the historical old cown is livelier now than it has been in the past old cown is livelier now than it has been in the past old cown is livelier on the man it has been in the past that place have proven of aid to the old camp. But the compass of the

mingly and we anticipate good results in the near

They have true a tunnell on the eldeger and the continuers of solutions to the fereing and the continuers of solutions to the eldeger and the ground. M. A. Baugh is the superintendent the ground when the ground in the ground of the content of developments of the content of developments of the content of the content of which is the continue on a sound basis. The man are suming the which is the continue on a sound basis any great her properties the company, it perhaps the content of which is the content of the company, it perhaps the content of the content of the company, it perhaps the content of the content of the company, it perhaps the content of the content of the company, it perhaps the content of the content of the company, it perhaps the coffice of the company, it perhaps the content of the company, it p

The ridge is about eight nines of the total country, and the process of the most extensive gravel claims in Plumas.

Low GRADE.—Basta Courter, Oct. 22: Wm. Love claim. In a said the ore is not of high grave conditions of a state of the most extensive gravel claims in Plumas, tho cked off at the mine near Fort Dingee. Ten thousand oldiers have been responded to the claim. It is said the ore is not of high grade, the claim. It is said the ore is not of high grade, the claim. It is said the ore is not of high grade, a second Lost Confidence mine on Iron Mountain, adjoining Camden, Magee & Sallee.

Lowes Paytured, Mures.—Cor. Courter, Oct. 22: The mines here are the only industry that will be to let the interest of proper mines, then this country will be interest of proper miners, the his immediate country a permanent bone in this immediate country a permanent bone in the farework of the working of the interest of proper miners, and in text most any kind of the interest of proper miners, and in text most any kind of the interest of proper miners, and in the miner bunch and were lockly bounded the said of the country will be large of the country will be large of the cash be found in this shows permanency in most all faster very promising region.

Lowes a large field open to the prospector extending promise, and many others equal in size and ricelatures. All the wall be paying mines of blastics and many others equal in size and ricelature of a large field open to the prospector extending promise, and mines, for mines are panning out of the many miles north, south, east, as rich mines of blastics, and many others as good fried about north and west of Shasta, and were old to Joshus Hendy of San Francisco, and Johns and well of Shasta, and were old to Joshus Hendy of San Francisco, and the another good mines, and shasts, and were old to Joshus Hendy of San Francisco, and the monther product and well of developed to ore of the proper of the proper of the said of the south of the south of the south of the south of the sou

good progress with the work of erecting the mill. It is expected that crushing will begin in a few days. Bap Basonis, who was in town last, week, reports good progress in his mine. The trisl between the claimants to mining ground on the Morth Fork, is comen of on the stand of their greats other test against the iscaring the iscance of the patents of when greats and their ground, but their ground, their ground and patents of the ground, their ground, their ground and the ground as a ground, the ground as a ground, the ground as the Lost Change, and graft and pad weighing the ground as the Lost Change. After munning a tunned is on the mountain above lacken or the ground as the Lost Change, and graft what is known weighing tropects very rich, two slags being isken out near that one the ground as the Lost Change, and graft what have prospected to the ground as the brospected of the ground as the decident of the ground and the ground an

SAVAGE.—Are repairing the two south compart-ents of the hoisting shaft to the 800 and 950 levels

SEGREGATED BELCHER.—The raise from the agon level is up to feet above top of the drift, the store from the face being in ore that assays from \$10 to \$70 per ton. This work has been stopped blower to enable the work to be prosecuted with three days.

KEYES.—During the week this mine was sold to be. A. Scott and other San Francisco capitalists for a property, who paid 4,429 in cash and gave a mortgegge on the claim for the balance, which balance is payable in three months. It is understood that the mew management will soon put men to work. At the time work was suspended in this mine the prospects were fattering.

CROWN POINT.—The southwest drift on the 400 CROWN POINT.—The southwest drift on the east wall level was stoopped aince last (est from the east wall to has run through 45 feet of good ore, and the entire face is in the same material still. Have also started a drift, north from the southwest drift, apposite the south drift, to connect with No. 3 crosscut, it is in feet in quartz grood assays. It is the tim quartz grood assays.

Day \$z\$ dividends.

CHOLLAR AND POTOSI.—They have been cleanmans from an old drift on the 900 level where the old management got ore out several years ago. They are now uprasing in this drift and are getting streaks of ore, the ground being promising. The Streaks of ore, the ground being promising. The abody of low-grade quarts. The Chollar and Postosis are done not be the driven to the great almost to the great almost to the great and the balance can be knocked down leat, I have been delayed considerably waiting for easings. The pans have deen fact to run under the mill has been delayed considerably waiting for easings. The pans have been fact to run under the rested it as change is desirable it will not cost much the cost more than the process.

Weahoe Dietrict.

Weahoe Dietrict.

Weahoe Dietrict.

Verlow Jacket. — Virginia Enterprise, Oct. 22:
Are shipping asso lons of one per day, which is experiment of the proof, 1500 and 1400 levels. Are company loses the Santiago and Virginia Those company loses the Santiago and Virginia Those while they will commerce upon Crown Point ord.

CON, CAL, VA.—Consection has been completed when they will commerce upon Crown Point ord.

CON, CAL, VA.—Consection has been completed they will commerce upon Crown Point ord.

CON, CAL, VA.—Consection has been completed to the proof of the proof of

### MEANDA.

next year.

Trinity.

EAST FORE ITEMS.—Trinity Journal, Oct. 223; though not at its full capacity of cruebes about 100 global not at its full capacity; it cruebes about 100 global not at its full capacity; it cruebes about 100 global not at its full capacity; it cruebes about 100 global not at its full capacity; it cruebes about 100 global not 100 g

SIERRA BUTTES,—The Sierra Buttes Co, will at once begin the etection of a so-stamp mill in the place of the one burned down at No. 6 tunnel, The two weeks, Things are being put in good shape for winter work at the Mountain mine.

and also to ascertain the most economical way of treating it. The owners of the Bachelor mine at Jein's pass are pushing the work of development on that property, and are meeting with success.

While sinking the main shaft they struck richer or had a struck richer or struck ric

ORECHORN MOUNTAIN AND GRANITE.—B.ed.

CRECHORN MOUNTAIN AND GRANITE.—B.ed.

CRECHORN MOUNTAIN AND GRANITE.—B.ed.

To work perceated from Greenhorn mountain and the city yesterday from Greenhorn mountain and the clip yesterday from Greenhorn for the clip yesterday from the granite, a new strike has been done in this mine. Tabor, good quantra that seasy, sto per for complete the complete that the Labelbey and will begin cruahing anything ever before found in this mine. Tabor, for a clear of cream & Co., so many anything ever before found in this mine. Tabor, for a clear of complete that the cream of the first property some in this mine. Tabor, for a clear of creaming the property some in the mountain that the capacity of the for a clear of the for mountain that the capacity of the for mountain that the for mountain that the for mountain that the for mountain that the for a condition of the for white the past that the for a clear of the formation of the form for the form for the mountain that the form one fine during the year. Many will winter in the vicinity of the mountain that the form of the mountain that the form of the mountain that have made for mountain that have made locations on Greenborn mountain, and the vicinity of the mountain that have and Coold Hill, we less that the vicinity of a cloud that the form the contract of the form the contract the vicinity on busing operations of the mountain that in barries on one for the formation on busing operations of the numerous prospectors. If the vicinity the reach the or one of the best and most extend the formation on busing operations. I there is every prospect leaded and the great of the formation on busing operations of the number of come up to one busing operations. I there is every prospect the stable of the formation of the form capture, and

THE BLACK DIAMOND TUNNEL,—Park Record, oct. 28: This group, the Black Diamond and dvemcod, owned mainly by H. Harchman, lust below and adjoining the West Ontario shaft, with which it to totain as tree tricklation of air in both workings, is being developed by a small force of miners. The funnel is in a couple bundred feet, from which point a shaft is being aunk.

win be fully realized.

Mining Excitement,—From parties who have just serviced from Canyon Clyl, we lesten that a genuine mining excitement has occurred there, genuine mining excitement has occurred there, people thereshouts are considerably on end regardpeople thereby a support on the considerable of the considerable of the scene. The man are the properties of the considerable of t

SILVER CITY.—Avadanche, Oct., 283: The Phillips of the control of which is being faulted to Leonard mills determine the control of which is often on the Empire State mine is farst class, some and set there is plenty more in sight, the Empire of which is very rich. The whole will mill well, and as there is plenty more in sight, the Empire of which is the created as a paying mine. A cross-car is being driven from the shaft of the Henrietts of the court, but only leads will carry rich ore when to cut, we understand that the Owyhee mine will be started up in a short time by Mr. R. S. Howe, The mine is thought by the old residents of this place to be a good one, and that a good chute of ore will be developed.

### MONTANA.

BUTTE REDUCTION WORKS,—Butte Miner, Oct. 19: At the Butte Reduction Works the entire plant is being worked to its utmost capacity, turning out being worked to its utmost capacity, turning out being great quantities of matter. Large piles of ore strength of their being placed in the blast furnose for smelting. The coken bins are all full to overflowing, in order to be prepared in case of any delay or blockades the coming pared in case of any delay or blockades the coming many lessees and thompson, the mineralogists of these works, and the analogist of these works, the company are at smelter the delaing. Every cached of matter and thompson, the mineralogists of these works, the company are at present between the delaing, they capacity the company are at present busy in remodeling their sampled, to determine the quality and correct amount or made at the Colorado Smelting plant the past summander and the company and correct amount of the company and correct amount of the company and the samp more. The Mornill, who, it is recommender and the company plant the pletting much company are at present busy in remodeling their made in file Colorado Smelting plant the pletting matter in the locker, and the company are at present busy in remodeling their sample commence and can be distinctly seen from the city, though the plant in the downkings. The Morning Sist to present a sight to keep their as a south of their works, the water is very bard to get if do. The large or the distance, and can be distinctly seen from the city, and distance, and can be distinctly seen from the city, and distance, and can be distinctly seen from the city, and distance, and can be distinctly seen from the city, and start is very bard to get if one works, the works of them have a give to determine the company of the samps runder such as a contender of the company of the company of the company of the compan

ARIZONA. DEVELOPING.—Belmont Courter, Oct. 22: The boisting of the water from the 2-G mine at Tybo has been temporarily suspended. As soon as a sufficient quantity of wood is received at the location of the works the botsting of the water will be resumed, the meaning the work of development will be purshed energetically between the 6th and 7th level the 2-G mine.

Tybo District.

able mine,

Alvinc Dividence, "Silver State, Oct, 21: Perely Wilning Dividence, "Silver State, Oct, 21: Perely Woode, whose side owner of that value has never wavered, is now sole owner of that value able property. Recently he shipped a lot of ore to able property. Recently he shipped a lot of ore to dividend payable to himself. The Antimony mine dividend payable to himself. The Antimony mine dividend payable to himself. The Antimony mine miners, produces about 12 tons of ore monthly, miners, produces shour 12 tons of ore monthly miners; produces shour 12 tons of ore monthly which is shipped to San Prancisco, and the owners are enabled to pay a dividend of \$100 and the owners see enabled to pay a dividend of \$100 a month after paying all expenses.

Tybo District.

SECRET TREASURE.—Sittor, Jane, Oct. 22: In SECRET TREASURE.—Sittor, Jane, Oct. 22: In Prol. Tuck has a force of men at work on the Secret Treasure, with good prospects of developing a valu-able mine.

Ryo Packch Dietrick.

Good Prospects...

Joseph Prospects...

Ryo Packch Jose, Oct. 22: There is considerable activity in mining operations at generalize the considerable activity in mining operations at the limit of keno are at work on the Ryo Pack and Alpha mines. They remained the letter and Alpha mines. They are now sacking some too feet from the surface find ore that assays as are running a drift on the lead, and at a depth of the surface find ore that assays as of this core for shipment to the Room of this ore for shipment to the Room of this core of sthondown the Myorke. The same men have bonded the old Ryo Morks. The same men have bonded the old Ryo mine, which has been relocated, and which properly in the same men have bonded the old Ryo mine, is being worked under the supervision of the wind and the worked under the supervision of the machinery for which is now at Rye on the mine, the machinery for which is now at Rye Patch.

ORE SHIPMENTS,—Soutined, Oct. 22: During the mines about one of the mines about of the district to the Richmond works—Jackson of the district to the Richmond works—Jackson ones, Stepublic, 4 tons; White Pine, 7 % tons; Silver Connot, 73 tons. Eureks (on-Huminek mine, 10 Connot, 73 tons; Paul Pry, 14 tons; Abobinson, 7 tons; Keng, 10 tons; Paul Pry, 14 tons; Rescue, 28 tons; Rankon, 9 tons; Marguretta, 4 tons; Rescue, 28 tons; Barton, 8 tons; Hoosac, 25 tons; and Lake Shore, 10 tons.

Among the sense of the sense of

Arabia District.

ALTA.—Upraising on the 785 level of the Key-stone win and storing the ore away until the mill

HALE AND MORGEOSS.—On the 1350 level the st crosscut from the bottom of the winze has been st crosscut from the bottom of the winze has been frended 48 feet, making its length tap feet, 70 feet which is in fine-looking quarts that gives some it assays. From this drift, about 70 feet back of a fact, have started a drift north in the quarts else.

This work will be finished this week, and work can then be tesumed on the several levels below the 80 level. Are adipping 60 tons of one per day to the Mexican mill, which amount will be increased when there is sufficient water in the Carson river to justify it.

the shell is a couple bundted feet, from which point a shaft is being aunk.

Above THE ONTARIO.—It comes from a reliable source that several sales of mining ground, situated been made recently by poor prospectors to one of the leading companies opening, many season in the leading companies opening, many season in the leading companies opening, many season in the leading companies opening, many forms in eventually for a share of the leading of the leadi

Andez.—Running a west drift on the 240 level.

ing well.

JUSTICE.—On the 250 and 350 levels the prospects are good and ore is being extracted. There are over 1000 tons of pay ore on the dump.

BEST AND BELCHER,—Have stopped the upraise from the 700 level in the east drift, and there is no total to to the 100 method of the seast drift, and there is no total, 327 feet. Joint Mexican-Union drift on the 1300 level is being driven.

JERRA MEVADA.—The south lateral drift was extended 84 feet, total, 519. The face is in a portant of the 100 method of the 100 meth

ALPHA, EXCHEQUER AND IMPERIAL.—Are cross-cutting on the 12s level 150 feet south of the north line of the Exchequer, All the machinery is work-ing well.

OPHIR,—The west drift from the winze on the agone level was advanced so feet. It is running to gooneed was advanced so feet. It is running to astronger of quartz and porphyry.

SCORPION,—Since the last report the east drift on East of the last report the east drift on the shelf advance do feet, making the length from the shaft soo feet. The lace of this length from the shaft soo feet. The lace of this and the shaft so feet. The lace of this and south in the wein; and are drifting north south on the soo level, also.

say, Oger, —In the last two days ore averaging from to go go per ton has been struck in the deepest on time, which is over ago feet from the satisface. It will take some time to determine its estation.

IMPROVEMENT IN MINING.—Elk Mountain Pilot, OCL. 20: The summer manney assoon is about over a face of the discount of the summer of the solution of the summer manney assoon is about over after of the summer between the seven years do the solution of the save been in the development of those who have fairfully study by their claims. Every year looks a little brighter, by their claims. Every year looks a little brighter, by their claims. Every year looks a little brighter, by their claims. Every year looks a little brighter, and with the same amount of courage and persevertand with the force of the same will certainly result in this country being the future great and with the same amount of courage and persevertand in the same the future great little worked and the Rorest Obers of the Ballion King has improved very much from this being worked and it proves to be the mine we have the force of years, and hit proves to be the mine we hear to be the mine we have in to be. Aside from these mentioned there of the force of the same will est to be. Aside from these mentioned there have no claims, and why mine-owners will let their claims remain idle in so rich a camp is a mystery that we cannot solve.

with the manufacture of the company is shipping its concentrates to San Francisco, and they form no small part of the bullion output. Work on the San Rales commenced this week and will be actively prose-

# continues to produce good ore, and that he will make another shipment shortly. Phil. Bowers and Charley Miller, who bave a feese of the Legents and Charley Miller, Who bave a feese of the Legents and their properts are over snoomerging. The Pamico is showing by the owners for working it. At one point an appropriate to Sai Transfer and their properts are not not not present after the of one point an noting of the property of th

MINING AND SCIENTIFIC PRESS.

MOTICE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are tested because fure leaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry.

## 521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material,

-MANUPACTURER OF-

Agent for HOSKINS' BALLERY SCREENS AND WIRE CLOTH

HYDRO-CARBON ASSAY FURNACES,

HORACE D. RANLETT,

BACE Fires of the Munue and Scientific Pares (un-bund) can be had for \$2 per volume of alx months. For car (two volumes) \$5. Inserted in Dewey's patent bind-r, 60 cents additional per volume.

Under good bonds, several first-class Gold Quarkz Mines, casted in Amador county on the true lead; well de-sloped and ready for mills. Samples and all particulars office of the above.

Special attention given to management and sales of mines and purchase and shipment of copper produce.

QUARTZ MINES FOR SALE.

Twenty years experience, in California, purchasing Ores and dealing in Mines.

DUION COPPER MINE, CARACTE CO.

THEWTON COPPER MINE, Amador Co.

Correspondent as Agent for Smelters in London, LiverCorrespondent as Agent for Smelters in London, LiverCorrespondent as Agent for Smelters in London, LiverCorrespondent as In Children and Control of the C

420 Montgomery St., S. F. Ores, Mining, and Commission,

### PNEUMATIC PULVERIZER No. 108 FIRST STREET.

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

FOR SAVING GOLD!

SAN FRANCISCO NOVELTY AND PLATING WORKS

FURNISHED ON APPLICATION,

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

MADE OF BEST SOFT LAKE SUPERIOR COPPER

POWERFUL OPPOSING CURRENTS

# Of dry super-heated steam, so arranged that they continuously observe themselves with crushed or granulated material, and by the granulated or granulated material, and but granulated the free for defore with moth power to concurs ston as to cause the hardest ores to be pulverized to any degree of incases desired. The high temperature of the superstances are cause the hardest ores to be pulverized to any degree of incases desired. The high temperature of the superstances and creaments and ores continuing rusty deold. The light weight and can continuing rusty deold. The light weight and simplicity of construction of the fulverized, the extremely small and inexpensive wearing parts, are the WONDER and SUKFRISE of all who witness its operation. The Company is prepared to furnish complete plants for pulverking and SUKFRISE of all who witness its operation.

Including a Sectional Steam Boiler supplying all the power required.

PNEUMATIC PULVERIZER COMPANY.

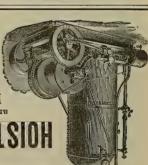
10 TO 200 TONS PER DAY,

2 and 4 Stone Street, NEW YORK,

Write for Particulars. E. A. LUCKENBACH, Sup't.

BUG BOILERS, 300 Sizes NANUFACTURER OF FIDGER MOOD W.E.G CO

IN QUARTZ, GRAVEL, OR PLACER MINES.



sectional View of Pulverizer,

TNATAS New York. Liberty St. 96 San Francisco Cal PARKE, LACY & CO., Agents,

CHINISLS, LOOFS' NEM HVAEN WVNNE,G CO',Z WY-FRANK & CO.'S WOODWORKING MACHINERY.
MACHINERY.

## LIFE-SAVING RESPIRATOR

Entirely Prevents Lead Poisoning

and Salivation.

The most perfect appliance for people engaged in Samelsting, Dry Crushing, Carano Works, Oursolfing, Dry Crouping, The Good corroding; Threshing and all other competitions and state of the state of th

JOHN TAYLOR & CO., Sole Agents, 114 to 118 Fine St., San Francisco.

A Send for Descriptive Circulars containing Testi-sonials of well-known parties who are at present using

THE GIVAL POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

CIVIL POWDER OF DYAMITE, Of DIfferent Strengths as Required.

GELATIUE-DYNAMITE, Stronger than Dynamite and even safer in Handling.

10DZON POWDER IMPROVED.

FOR EALLEGOADS AND LAYED CLEARRING, is from three to four times stronger than ordinary Blashing powder and runs as freely. It is as dry as the ordinary Blashing Powder and runs as freely.

BYNDWYNN' MIEISEN & CO..

CAPS and FUSE for Sale.

California Inventors Brould consult Co

AMD FOREIGN PATENT SOLICITORS, for obtaining Packs and Greenist Statement Solicitors, for obtaining Packs and Greenist Statement Solicitors of Statement Solicitors of Sol

A specialty, Round, slot, Change, s-buyin, ob experience." The man who who wit all is allura-makin unde flussia from, Homogenes free, flast being the flust the "knows it all" shout them in Grimstans. Since, Copper or Bress Screens for all purposes. Call.

Since, Copper or Bress Screens for all purposes. Call.

Since, Copper or Bress Screens for all purposes. Call.

Since, Copper or Bress Screens for all purposes. Call.

Since, Copper or Bress Screens for all purposes. S. F., S. F., Cal. **QUARTZ SCREENS** 

# ENCINES Sug BOILERS

FROM 2 TO 100 H. P., ALWAYS IN STOCK

MILL SUPPLIES AND LUBRICATING OILS.

YACHT ENGINES.

SOLE AGENTS FOR

IMPORTERS AND DEALERS IN ALL CLASSES OF

**CREGORY** 

Practical Treatise on Hydraulic Mining.

44 Third Street, San Francisco, Cal. BY AUG. J. BOWIE, JR. **MINCHEZIEB HONZE'** 

This tree-proof Brick Building is contrainy to be in the beather are in the city, only a half block from the Grand and Palace Hotels, and close to all Steamboat and Railroad Offices.

HOLLOWAY FIRE EXTINGUISH-BRADLEY CUSHIONED HAMMERS.
SCHLENKER'S STEAM HAMMERS.
SCHLENKER'S BOLT CUTTERS.

BEVINVED MILLING MACHINES

STURTEVAUT BLOWERS AND SERIN BYND SYM BUNDES. WEBBER CENTRIFUGAL PUMPS.

PUMPS, IMPROVED STEAM

TOOLS, SON'S MACHINISTS

Cor, Fremont and Mission Sts.,

BICKLORD'S POWER DRILLS.

TURBINE WATER WHEELS.

SHIMER MATCHER HEADS.

Terms, Board and Room, \$1.00 per Day Laundry Free for the use of Families
Hear and cold baths free.

This new and important book is on truction of Ditches, Flumes, Dame, Pit, Heavey Gredes, methods of mining the Service of the Pitches of District, Sundercurrents, of the College of District, Sundercurrents, of the College of District, Sunders and all mines are map; daty of miners and users of water and users of water of the College of

TYME YND BODIEK SYM MILTS'

IZG CO',Z KNBBEK GOODZ' MEM KOKK BETLING VAD BVCK-

TORS. TORS.

NATHAN AND DREYFUS OILERS,

JUDSON ENGINE GOVERNORS.

LICKERING ENGINE GOVERNORS

EMPIRE LAUNDRY MACHINERY,

SOUTAL ENGINES.
PAYNES VERTICAL AND HORI-

ATLAS ENGINE WORKS ENGINES

ENGINES' BEOS, HOIZLING

San Francisco, Cal.

OLLO SITENL GVS ENGINES'

DISSLOWS CHECULAR SAWS.

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

The Bugging and the Board of the Coach To The House and the Board of the Board o

## Retallurgy and Ores.

### SMELTING and LEAD CO. **SELBY**

416 Montgomery St., San Francisco.

And Assay Office. COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

ENGINES, BLUESTONE, SHEET LEAD, SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GIELS, GIVERNOUS VAD SAADKIES' KL CHEMICVI VLLVEVALAS VAD CHEMICVIS'

114-118 Fine Street, - San Francisco, We would call the attention of Assayers, Chemists, Whing Companies, Frongentier Companies, Propactors, etc., bios, Sorvifiers, etc., including, attention, cruci-bies, Sorvifiers, etc., including, attention of Chemiscale.

Troy at different degrees of finences, and valuable 3 for comparation of degrees of the season in Frains and gramme as sor comparation and successful and su

ио. 28 втетеивои втвеет, Nevada Metallurgical Works.

Mear First and Market Streets, S. F.

Ores worked by any Process,

Assaying in all its Branches. Analyses of Ores, Minerals, Waters, etc.

Special attention paid to Examinations Working Tests (practical) Made. Plans and Specifications furnished for the most suitable Process for Working Ores.

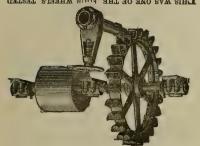
Mines; Plans and Reports furnished,
O. A. LUCKHARDT & OO.,
(Formerly Huhn & Luckhardt, )
Mining Engineers and Mecallurgists.

METALLURGICAL

corner of Leidesdorff Street, . . SAN FRANCISCO 818 Pine St. (Basement,

G. KUSTEL & CO., Engineers and Metallurgists

PELTON'S WATER WHEEL,



Ave 80 2 per cent, distancing all competitors and of the foundation of the foundatio

INVENTORS, TAKE NOTICE

L. PETERSON, MODEL MAKER,

QUARTZ MILL. Hantlugton Centrifugal

SEND FOR CATALOGUE

IIES and TROMMELS. COBNISH BOLLS,

& CHALMERS

FUCINES AND BOILERS.

This Mill as a Crusher and Pul-verticer is without rival, Is in operation in lead.

**FRASER** 

, SAMUA

MACHINERY,

CORNISH

**ENCINE2** 

PUMPING

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

HOISTING

HALLIDIE'S

MIKE ROPE

MEXICO OFFICE: No. 11 Oalle de Juarez, Ohibuahua, Mexico. DENVER OFFICE: No. 248 Eighteenth Street, Denver, Colorado. TRAMWAYS,

NEW YORK OFFICE:

BOOM 48, No. 3 Wall Street. GENERAL OFFICE AND WORKS: Fulton and Union Streets, Unicago, III.

### Mining Turbine Water Wheel, LEFFEL'S **JAMES**

JAMES LEFFEL & CO.,

Springfield, Ohio,

or 110 Liberty St., New York.

FRASER & CHALMERS, General Agents, Obicago, Ill., and Denver, Col

Quartz, Gravel and Placer Mines!

SILVEY-Plated AMALGAMATING

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Old Mining Plates Bought, Replated, or Gold Separated.

San Francisco Gold, Silver & Nickel Plating Works, Assayers' and Mining Material, 112 to 118 Pine Street.

653 and 655 mission st., san Francisco, Cal. E. G. Denniston, Proprietor.

## THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

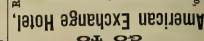
BULLION ROOMS and ORE FLOORS,

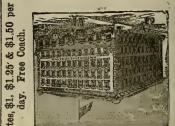
524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed







OHAS. & WM. MONTGOMERY, Prop'rs.

Market St., M. E. cor. Front (up steirs), San Francisco perimental machinery and all kinds of metal, tin or and bress,

### MINING SHYREHOLDERS' DIRECTORY.

AND OTHER S. F. JOURNALS.	DITITION AND SOMEWHIND PRESS.	LED BYERY THURSDAY PROM ADVERTISEMENTS IN	I COMBI								
			~								

90 M Goldman S3, 1889 M 7, 189 M 9, 289 M 1, 289					
## Samid Tax	ZT 120	ac am x ore			OO MI HOO DIRDHEAG
Sami'rect   Samines   Sa	el 3498 pp	38 emosnas ust	E E Berier	atarolilaDoU	
## Sami'Y S.	ci yire	SEE PRODUCEORDERY SE	J. Mash	saosirA	
OOMPANY. (COMPANY. LEAVIED DELINGWIT SALE SECRETARY, PLACE OF 100 MAY. LEAVIED DELINGWIT SALE SECRETARY, OO MATOR OF 100 MAY. LEAVIED DELINGWIT SALE SECRETARY. OO NICHOGES SEED SEED SALE SALE SEED SALE SALE SEED SALE SEED SALE SEED SALE	71 das	328 Montgomery St.	oiznoM C		Russel Reduction & M C
## Sami'Y SE	d 450	398 Montgomes St	W Lette Oliver		
OOMFANY. OOMFANY. INCOMENT. LEVIED DELINGWER SLAR SECRETARY, OF ALOLOS OF STARINGS OF STAR	61 vsM0I	222 Montgomery St	T Wetzel	sin:olifaOof	Derbec Bine Gravel M
OOMFANY. OOMFANY. INCOMENDE 3. 68. 68. 68. 68. 68. 68. 68. 68. 68. 68	7 450	309 Montgomery St	визуен W A	"O Mevada	M sV & signofilsO noO
Connent	AMOUNT, PAYABLE	OBBIOR IN S. E.	SECRETARY.	LOCATIOM.	MAME OF COMPANY.
Connent	CHTHS.	HIN LEBEE MON	IDENDS-MIL	LATEST DIV	
## Stand To and A content				Con M Co Cal	Gt Republic & New Star
## Sanit Tis		328 Montyomery St	A Halsey	signofileO	Grat Western Q M Co.
COMPANY. (COMPANY. ARAITED, DELING'NT, SALE SECRETAR, TACADOR (COMPANY. SALE)  COMPANY. (COMPANY. (COMPANY. COMPANY. SALE)  COMPANY. (COMPANY. (COMPANY. COMPANY. COMPANY. SALE)  COMPANY. (COMPANY. COMPANY. COMP	MEETING DATE.	OFFICE IN S. F.	SECRETARY.	LOCATION.	NAME OF COMPANY.
Sami'rect   Sami		BE HETD'	REELINGS TO	Ø.	
Sami'record   Saminary   Samina	Her Sign Montgomery St.	10Oct 29,, F E Bu	300.,8 ages.,20 ,	Co Califora., 5.,	Yosemite Queen S & L M
Activities   Act	TRAIN 33 + Montgomery St	ZS NOV IS. A Water	TOU. UE TOOK, UE	L SIMUSITA.	Welded M conlaw
Complet M Co.   Complet M Co	48 vismostno M 304		VOY TS sqoB 30	California 4	Virginia Creek Hyd M C
AS   AS   AS   AS   AS   AS   AS   AS	18 storottist etc morgania	HAM A OF SOLL SE	100''67 8nw''0T '	"7 "BDBAGAT 'OO	SOUTH COMBEOCK COR IN
OMENAY. ACCORDANCE TO CONTROL MAY LEATED DELING'NT SALE SECRETARY, PLACE OF BUSINESS STARS, ACCORDANCE AND CONTROL MAY LEATED DELING'NE SALE SECRETARY. OO N. 1200 MAY 1. 1000	320 Pine 3t	II Dec 15, G R Spi	10Oct 7Nov	Nevada22.	Scorpion S M Co
COMPANY   COMP		11,,, Oct 31, E B Ho	45O.,8 4q58.,0c	.63abavəM	Savage M Co.
Ramif To Enon. II.         TATATANOR         TALATANOR         ATATANOR         ATATANOR<		PATE A ST YOUT TO	450 . 02 4deg. 32	OL. BROSITA	Peerless M Ch
COMPANY   COMP	at yramogameM 808 an	LDec 26JLHu	29.CL., UL 35.CL., UI ,	California	Mew Coso M Co
COMPANY   COMP	48 vramoganoM 828ioi	SITOM LSS VOMI	vo M 72 Just 22	California38.	Maytlower Gravel M Co.
COMPANY. LOOATION, NO. AM'T. LEVIED. DELING'NT, SALE. SECRETARY, PLACE OF BUSINES COMPONY.  Con Peolide M Co			30061 tq980d		
COMPANY.         LOOATION, NO. ART. LEVIED. DELING'NT. SALE.         SECRETARY.         PLACE OF BUSINES.           COMPANY.					Missing Management
COMPANY. LOCATION, NO. ART. LEVIED, DELING'NT. SALE. SECRETARY. FLACE OF BUSINES COMPANY. GOOD STATES SALES. SECONDS SALES SAL	48 vrsmogtanM 823, seesathas	28 Dec 20 H De L	1-5c., Oct 21., Nov	California. I.,	Comanche M Co
COMPANY. LOOATION, NO. AM'R. LEVIED, DELING'NI, SALE, SECRETARY, PLACE OF BUSINES Belch" M CO	de 623 Montecomery St	18Nov 8.W B La	45O &I vfr L &O	M Co, Cal., 4.	Cataract & Wide West C
COMPANY. LOORTION. NO. AM'T. LEVIED. DELING'NT, SALE, SECRETARY. PLACE OF BUSINES	18 aut 126		thO a tqaddl	.e. sinrolileC	Con Pacific M Co.
	and			off wormand?	TW (disco)

## Table of Lowest and Highest Sales in S. F. Stock Exchange.

		•	e Sir	1				'1 'C
SIN SIN	ENI	DNI	WE Entr	DNI	ME WE	ERE SING	WE GWE bO	NAME OF
=			_					
θ . ε	06.8	6.00	38.8	06.2	02.2	5.25 2.30	00.4 00.2	AitssilA
τ.	98 I	09°T	98°T	148'T	1,25	08.I	32.1	
Ţ	62.6	itt	8,25	92.6	₽g Zg	2g	09.4	Relcher
4.	02.5	£7.	#9	90.7	40	\$2 94	07.4 07.4 39.1	Best & Belcher
1. 2.	1,90	1.30	01.1	86.I 81.I	00'1	1 10	06"	Baltimore
T 4	vo.	00.1	20°2	107. 188. I	69, I	08,	07. I	Belle Isle
2.4	96'I	<b>₹'1</b> 2	62.4	GI.A	00°F	GF 'F		Bodie Tunnel
Ţ	9I 96	ŠĮ I	\$9I \$8	06.	08	96.	06	Bulwer.
Z.	2,50 16	27.45 172	\$°32	2,50	25.25	198 03.2	66.1	Challenge
9-9	.89	.89.	79.	.8g	06:4	87,8		Ohampion noiomado
3,	₹8	00.8		08.8	62.8	1.80		Confidence
	g₽°	gg.	091	98.	G₽.	09.	0¥*	Caledonia
ı	HOT.	21.	78	88	08,8	00.8	00.8	Caledonia Pachfic On. Pachfic Orowa Point Orocker.
) I		1,00	06*	96	08,	08,	SŽ*	
		ċŝ.		ġξ.		••••		East B, & B
: 2	87.8	00 Z	05.8 86.1	00 Z		1.50	1.20	TOUTENER COULSESSEE
ï	1.30	1 35	4.95 30.1	OI I			34.8	Exchequer
1	01.4 07.4 4.10	€€.35 ₽.35	90'7	4.30	3,85	92'F	3.50	Hale & Moreross
					****		****	водоридерсе
	03.	0₽*	0g.	09°	O4.	09. 09.	0Þ.	
g	G₽.I	39'T	97°T	9₽'T	32, I	CY'T	07,	Justice
	å8.	961	92.	28*	97.	08,	69,	Kentuck
.2	96 1	2.10	1.15	1.30	1.20	30 8		Martin White
Ť.	0£. £		4*30		90°₹		05'0	Mexican
Ē		i 25	1.20	OI.I	00.6	1.25	OL.I	
	ZOI	20I	09'6			1111111	07.8	Nevelo North Belle Isle
ç	06.≇		92. F	69.₽ 64.65	04.4	g7.₽	68.₽	Nev. Queen
8	.24.	0η. μ ξ8	84.		96 Z	30.6	09 9	
8	34.I	2,00	08.1 08.1	2.00	09.1	07.1	05.8 1.30	Overman
I	87.1 87.8 87.1	or.I	CO'T	OC'T	7.25 1.60 5.00 1.00 1.00	01.E	cc.	reoriess
	GO.	67. 01.	091	39. 31.	0T.	09. 31.	UG.	Peer,
8	.48	.68	. Ž.Ž.	3 <u>\$</u> .8	17.	8.25	37,8	Savage
	UE, P	00 V	96.1	20.0	UU F	09.7	Or.	Seg. Beicher

# 

08.4 08.4 08.4 62.4 32.4 00.4 00.4 02.6 04. 08. 03. 28. 04. ... 04.

OD. G 5.00	1035 Hale & Nor 1035 Hale & War
C6.1	16 (66.£
ve.c	200 Grand Pr ze 1.3 30
aut	Salection, Taupanaxi USS
	50 Con, Imperial, 2.60 P
968 Scorpion goidrops of	og Confidenceivi 30
OG P , Shevad A straig Of	UZ   UV BIRODSLEO 907
Sevage	1450 Crown Point98 [843
GL.1, 8891709 O	770 Con Va & Cal173 30
200	250 Chollar
00 P. Sheridan Inc	100 Bodie Con
10 Potosi	200 Relle Isle80cl 35
UVETTIBILL	100 Bullion 2 July 3
\$8tidqO di	50 Baltimore, 1.25 19
0 Nev. (λαθου4.40	1260 Belcher10   55
O IV. Belle Is 10	250 B. & Belcher6,75
CE. L OHOM OF	335 AlphasdqlA 388
	29 Gt I
og8 dsaW vbad 04	1505 Alta3.15 30
33.I	THURSDAY! Oct. 27, 1887. 128
PERCENCIONAL CONTRACT	Salos at San Francisco
and the state of t	4 0

### San Francisco Metal Market.

- 60 58 "
Quioksilver—By the field 1 05 @ -
Obsrcosl
08 1 W) 01 0 10111111111111111111111111111
Mylor & Co 10 @ 16   Mylor & Co 10 @ 16   Mylor & Co 10 @ 16   Mylor & Co 10 @ 1
of the property of the propert
Maylor & Co
Flow Aschinery 44@ 5
d Molg
Sec
STEEL-English, ID.
Buot, & bag.
8 6 6 7 8 8 7 8 9 8 7 9 9 8 7 9 9 9 9 9 9 9 9
- 50 08 I . 3sd & . Oord 38d 005 ao %01 danos 1 80 @
® 8
Bar Sheet. 8 0 0 5 5 5 6 0 0 6 5 5 6 0 0 6 5 5 6 0 0 6 5 5 6 0 0 6 5 5 6 0 0 6 5 6 0 0 6 6 7 6 0 0 6 6 7 6 0 0 6 6 7 6 0 0 6 6 7 6 0 0 6 6 7 6 0 0 6 0 0 6 0 0 6 0 0 0 0
Lean-Pig.
Shotts, No. 1.
So on green and a second and a
50 02 SE 14 0, 14 0 14 0 14 0 14 0 14 0 14 0 14
American Soft, No. 1, ton
00 82 p) — uotailaa
The Box - Clears   - (231 50   100
Fire Box Sheets 21
SOT MET
Shearmak
Bolt 19 @ 21
COPPER
Armagosa
BOKAX—OMB DELIMINATION OMBO
ANTIMONY—French Stat
- 00) 48 TROMITMA
THURSDAY, Oct. 27, 1887.
WHOLESALE.

### Mining Share Market.

Although the news from the Oomstook mines is encouraging, stocke broke badly this week, There is more or less activity in shere; but the people who deat in them do not seem to be very confident of any marked advance, just now, confident of any marked advance, just now, confident of any marked advance, just now. The is the originis Chronicle says: In Crown Point The is considered an infallible indication that the originis considered and in the stand to a considerable depth, and it is now thought certain that its downward considerable depth, and it is now thought certain that its downward considerable depth, but of the follower to the follower to the down the follower to the down the down

### New Incorporations.

The following companies have been incorporations, Mohy Inforporations, and papers alided in the office of the Superior Court, Department IO, San Francisco: San Pedror Court, Department IO, San Francisco: Court, Ook. 20. Ool)see, to purchases and sellies the sand sequire water rights. Capital stock, \$10,000,000. Directors—E. H. Fardes, Class. M. Fox, A. E. Davis, E. M. Reilhon and Class. M. Fox, A. E. Davis, E. M. Reilhon and Class. M. Fox, A. E. Davis, E. M. Reilhon and Class. M. Fox, A. E. Davis, E. M. Co., Oot. 20. Oot. 20. Oot. 20. Capital stock, \$50,000. Directors—Co., Oot. 20. Directors—Alonzo Bromwell and Guetay Santo.

Bromwell and Guetay Santo.

Bromwell and Guetay Santo.

Ors—Genesay Walter, John W. Pew. W. E. Consity, F. A. Berton and John H. Roberts.

Conoda Valley Warter Co., Oot. 25. Cap.

Soloma Valley Warter Co., Oot. 25. Cap.

Conoda Valley Warter Co., Oot. 25. Cap.

Conoda Valley Warter Co., Oot. 25. Cap.

Santon Santon Santon.

Colom A Markel Marker Co., Oot. 25. Cap.

Land Co. Capital stock, \$200,000. Directors—T. F. Hooper, J. C. Stump, F. P. Bacon and John H. Marwell.

## New York Metal Market.

Bar Silver—95‡c pet oz. Borax—5‡@6½c. Copper-Larr—\$10.65@10.70. Iron—No. 1, \$22 00. Iraal—24.60@4.70. Telegraphic advices dated Oct. 27th give the following we York prices:

We Mich and the state of the state of the work of the work of the work of the state of the work of the state of the state of the work of t

These stands at \$4.50.

The Bloyand at \$4.50.

The Bloyand at \$4.50.

The Bloyand at \$4.50.

The Bloyand at \$4.50.

Prices generally ruling for metals not regularly dealt at the constitution of the constitu

HINTOLOGY OF PROPER 18, 1897.

PROPER SOLOR PROPER 18, 1897.

TONN—PH. J. SCESS—PRINT CARLE—A. H. Garper 20, 524.—BULDING CARLE—A. H. H. J. S. J. S. J. J. S. J. S

tore placed at such points in the chamber seasused of the state of the control of

The strok is lead the proper the contest with the contest cont ELECTRIC ALARM-CLOCK, -S. P. Meads, Oak

FOR THE WEEK ENDING OCTOBER 18, 1887, 1816-59.—RIVETING MACHINE—Matihew Arnold, S. F. HAV LOADER—Arnold, Mitchell & 371,529.—HAV LOADER—Arnold, Mitchell & 371,509.—CABLE-RAILROAD CROSSING—E. B. Badlam, S. F. 1816-FATHERING PADDLE—A. H. Carpenland, Ogn. —Prantomy Arnold Carpenland, Ogn. —Prantomy Carpenland, Ogn. —Prantomy Carpenland, Cappenland, Ogn. —Prantomy Cappenland, Cap

Nors.—Copies of U. S. and Foreign patents furnished by Dewoy & Co., in the abortest faire possible (by mail pot blessing rate of the control and general patents and foreign patents of the cost of the control at the control and general patents are security, at reasonable inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

### Notices of Recent Patents,

Garle Ratinary Crossing and Ourye.—
Edgar B. Badlam, S. F. Wo. 371,660. Dated Oot. 18, 1887.

The invention relates to a device for transferring cars of one cable-railway vice for transferring cars of one cables which run fine across a similar line of cables which run fraveling carriage which moves a short distance traveling carriage which moves a short distance which receives its motion by connection with which receives its motion by connection with means for connecting the carriage or its original position after its divty is performed, and certain details of construction.

Machine for Makhine Stiral Moldings.—

Machine for Makhine Stiral Moldings.—

Machine for Makhine Stiral Moldings.—

performed, and certain details of construction, the control of construction.

Machine Tor Makine Straal Moldings.

James H. Chiver, S. F. No. 371,673. Dated Oct. 18, 1837. This machine for making of the unding spiral of control of the action whereby the suggest that details of control of the cutters are to make a rain details of control of the cutters may also be trained spiral, and the cutters may also be right or left spiral, and the cutters may also be right or left spiral, and the cutters may also be right or left spiral, and the cutters of molding. It should be consists in a peculiar adjustable feed mechanism by which the stick may be fed at any acceptant of the cutter of the cutter of make a right or left out or any reducted to make a right or left out or any reducted to make a right or left out or any reduction to make a right or left out or any reduction to make a right or left out or the with the device forms an easily adjustable mechanism. The whole device forms an easily adjustable mechanism for outlity in each of the stick is beld firmly in contact with the rockerniam device forms an easily adjustable make or left, and desired twist, and either weighted arm attached to the table, which is set on the arm and the stick, a left of the eatier, as defined as a stick, as built in the stick, as built in the stick, as built and the stick as defined as a stick, as built and the stick as defined as a stick.



## ELECTRIC DEVELOPMENT COMPANY.

Electric Motors, Dynamos, Tramcars, Elevators, Signals and all kinds of Electrical Systems for lighting and transmission of power, sither direct or with atorage Batteries, istagid oirtoely or Arc Electric Lights.

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

The only complete and satisfactory incardescent system. Lights require no attention and are under complete control. Over 500,000 lights in use in the United States SELE-REGCULATING ARC LIGHTS turn night
into day and afford a means of working the whole 24 hours; invaluable to contractors and others to whom
time is an object. Estimates and designs on application,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

#### No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

NILHO-CTACEHINE

Blasting Powders.

FOR REMOVING STUMPS AND TREES, vigorit "LOW" Powder,

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager.

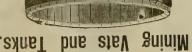
Patent Agency. lewey & Co.'s Scientific Press



OUR U. S. AND FOREIGN PATENT AGENOR BY SEAD IN PROBLEM PATENT AGENOR HOUSE U. S. AND FOREIGN PATENT AGENOR HOUSE AS GOING A GO

No. 220, Market St. Hevator 12 S. F. Telephone No. 658.

THE H. H. H. Horse Infinitely price from the property of the p





#### PRECIPITATING VATS, **LEACHING VATS WITH FALSE BOTTOMS.**

SOLUTION and WATER TANKS

MELLS, RUSSELL & CO.

San Francisco | A. T. DEWEY. W. B. EWER. GEO. H. STRONG.

DELINQUENT NOTIOE.

The following proclamation has been issued South Comstock Consolidated Sliver Min-by the President:

43 DEY ST., NEW YORK. AIR COMPRESSOR Works Compressor Works

## DOWNIE EUCALYPTUS

BOILER SCALE

PREVENTIVE AND REMOVER

ada no asu ni

Market St. Cable Railway, Standard Oil Company. Cal Sugar Refinery, Eftc. U. S. Wavy, Pacific Cosat S. S. Co.,

DOMNIE B' I' L' CO'

BYN FRANCISCO

204 MARKET ST., SAN FR. SEND FOR CATALOGUES.

JOHN T. SULLIVAN,
18t, Ploneer Building,

AO Fourth St. Ploneer Building. BAOT AND SHOE MAKER. Maker of the famous Mrake' Show. Send for a trial pair. Goods sent by mail or express.

This paper is printed with ink Manutace.

For Manuel by Oharles Eneu Johnson & Oo, 600

For Month St., Plantscaphia. Branch OMB
Ges -47 Rose St., New York, and 40 Ls Salle

St., Ohlcago. Agent for the Pacific Coset—
Joseph H. Dorety, 529 Commercial St., S., F.

The following proolemation has been issued by the Freedent:

by the Freedent:

The woodness and merey of God, which have following by the Preedent:

chim their grateful recognition and humble acknowled by deferrent by the project and were the project claimity. By this gracious favor the carried by the ompropers power the bras project claimity. By this gracious favor the carried by the branch of the brown of the book of the branch of

Our Agents.

Our Agents.

Our Agents.

Our Agents.

Cause of practical knowledge and science, by assisting there is not conversely and science and encouraging lavors. We intend to send on one out worthy men.

Jaken C. Hote-California.

Jaken C. Hote-Arlzone.

G. W. Rocales-Arlzone.

W. 100 Mark William C. W

#### Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms o subscription, and give it their own patronage, and give it their own patronage, and in circulating the journal, and making its value more widely the cause it faithfully serves. Subscription take, \$3 a year. Extra copies mailed for 10 rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

#### Don't Fail to Write.

Should this paper he received by any subscriber who does not want it, or degord the time, for intends to guide for the form of the form of

#### Easy Binder.

Dewey's patent electic binder, for periodicals, music and other processing the pr

The prisoners at Walls Walls are on a strike against working in shackles, and are living on bread and water.

#### Ores, Mining, and Commission, HORACE D. RANLETT,

420 Montgomery St., S. F.

DUION COPPER MINE, Calayers Co., UNION COPPER MINE, Calayers Co., Correspondent as Agent to Smelters in London, Liver pool, New York, Boston and Baltimore. Twenty Vork, Boston and Baltimore.

Special attention given to menagement and sales of mines and purchase and shipment of copper produce.

QUARTZ MINES FOR SALE.

Under good bonds, several first-chase fool (duartz dines, lossed in Amador county on the true lend; well desempted and ready for mills. Samples and all particulars at one of the above.

## Iron and Machine Works.

CALIFORNIA MACHINE WORKS, W. 119 Beale St., - San Francisco WO. 119 Beale St., - San Francisco WORIS, - San Franci

Steam Engines, Flour Mill, and Mining, Saw Mill and Dredging Machines

Brodle Rock Ornshers, Steam Power, Hydraulic, Steam Power Band-Power Steam Praces

Manulacturers of E.E. Henrickson's Petent Automatic after Catches for Elevators. All times of machinery catches for Elevators. All times of machinery catches and repaired.

#### SAORAMENTO, CAL. UNION IRON WORKS,

ROOT, NEILSON & OO.

Engines, Boilers,

MACHINERY FOR MINING PURPOSES.

Front St., bet. M & O Sta., Sacramento, Oal. Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired. Front St., bet, N & O Sts... Sacramento, Oal.

#### Golden State & Miners Iron Works.

Marufacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates

ASIG-BOATE AMALGAMATORS,

first St., between Howard & Folsom, Sta Golden State Pressure Blowers.

тномрѕои вкотнекѕ,

EUREKA FOUNDRY

MANUPACTURERS OF CASTINGS OF AVERY DESCRIPTION.

U. E. ORTON.

WAYLIFES OF GENERAL MACHINERY.
Works, Wo. 315 Mission St., San Francisco.
Special aftention given to Woodworking Machinery.
Steam and Gas Engines. Correspondence solicited.

#### MINING ENGINEERS.

MINING EXPERT AND GEOLOGIST. Civil and Mining Engineer, W. A. GOODYEAR,

Address " Business Box A," office of this paper, San

ROSS E BROWNE,

No. 307 SANSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

N. W. SPAULDING

S'DNIGJUA98 SAW COMPANY

Saws 1881 88 ANN CIRCULAR CHISEL BIT CHY Inserted Tooth

SAW MILLS AND MACHINERY

COLLEGE, COLLEGE, COLLEGE, Se S. S. Se Sost St. S. F. Sost St. S. Sost St. Sost St. S. Sost St. S. Sost St. Sost St. S. Sost St. Sos Construction of the property of general controlled of the property of the prop TJ38 MANOINAVA **LIFE RENEWER**,

> SHIPPING AND COMMISSION MERCHANTS, NEWHAL

809 and 311 Sansome Street, San Francisco, Cal.

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products.

Have correspondents in all the obiet others of the United States, Europe, Australia, India, China and the principal farmer of the Facilic. Furobase goods and sell California products in those countries.

General Agents for the Pacific Coset of WATIONAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass.

## PACIFIC ROLLING MILL CO.

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought Inc.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from § to 3 inch dismeter and Fletstrom I to 8 inch. Angles, Tees, Channels and other shape steel Wagon, Bueggy, and Treek Wagen, Bueggy, and Treek Flets Wander Break, Mark and Steel Wagen, Bueggy, and Treek Flets was and special shape Steel Briefle Grants, Regie, Channel, and Tron, Fridge and Machine Bolts, Leg Steens, Nuts, Washers, Shafts, Cranks, Prior, Fridge and Machine Bolts, Leg Steens, Wats, Washers, Shafts, Cranks, Prior, Fridge and Machine Bolts, Leg Steens, Nuts, Washers, Shafts, Cranks, Prior, Fridge and Machine Bolts, Leg Steens, Nuts, Washers, Shafts, Shafts, Cranks, Prior, Fridge and Machine Bolts, Leg Steens, Luts, Washers, Shafts, Shafts, Shafts, Cranks, Mark Steel Bridge and Koof Work a Specialty.

HIGHEST PRICE PAID FOR SCRAP IRON AND STREE,

HIGHEST PRICE PAID FOR SCRAP IRON AND STREE,

ad Iliw arebro 🐨

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

MOBKS IBON

CESTABLISHED IN 1865.] HINOKLEY, SPIERS & HAYES, Proprietors.

gen Erancisco

Stern or Side-wheel Engines, MARINE ENGINES AND BOILERS.

errier High Pressure or Compound

MINING MACHINERY.—Hoisting Engines and Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Fumps, Arit Gompressors, Air Receivers, Air Pipes,

Crushing, Amalgamating Pane, Settl ra, Furnaces, Retorts, Concentrators, Ore Feeders, Rock Breakers, Furnaces for Reducing Ores, Water Jackets, etc. MILL MACHINERY.—Batteries for Dry or Wet

MISCELLANEOUS MACHINERY.-Flour

Mill Machinery, Saw Mill Engines and Boilers, Dredgin Machinery, Powder Mill Machinery, Water Wheels.

**MORKS ORE WET OR DRY.** Tustin's Pulverizer

ENGINES BOILERS TUSTIN'S PULTERIZER

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGENTS FOR THE PACIFIC COAST FOR THE OF BOILST Repairs Promptly attended to and at very moderate rates.

SPECIALTIES: Deane Steam Pump.

Corliss Engines and Tustin Ore Pulverizers.

DEAUE STEAM PURE PURE STEAM PURE Corliss Engines and Tustin Ore Pulverizers.

Geo. W. Dісків, Мапаger. J. O'B. Сійии, Secretary, 380. W. Prescott, President, Rving M. Scott, Gen'l Manage

Office, 216 Market St., S. F.

ROTTORES OF-Location of Works, Potrero. P. O. Box 2128.

Pump Agents of the STEAM, AIR, AND HYDRAULIC MACHINERY.

Cameron Steam

HOME INDUSTRY. ALL WORK TESTED AND GUARANTEED.

BAEN HOISTS, VEUTILATING FAUS, BOCK BREAKERS, BOCK BREAKERS, BOCK BAEAKERS,

TRY OUR MAKE, CHEAPEST AND BEST IN USE.

SHAFTING, Vertical Evolues, Compound Condensing Evolues, Sharpung Condensing Evolues, Sharpung

**NIION IBON MOBKS'** 



STEAM. PUMPS, STEAM ENGINES, all kinds of MACHINERY.

**WACHINE MORKS** 

& 112 Reale Street,

EVANS

28h Prancisco, Cal

to THOMSON & EVANS),

Office, 40 Nevada Block,

Dynamos and Motors of all sizes for Conveying Powe om Waterfalls for use in Mines and Mills, erected unde saranty of performance.

Electric Rallways, and Apparatus for the Electric Transmission of Power.

Storage Batteries.

MOTORS, LAMPS

Keith's Electric Dynamos

Inventor and Manufacturer of

N'S' KEILH

221 & 223 First St., San Francisco, Cal JOHN W. QUICK, Proprietor.

San Francisco Pioneer Screen Works,

Orders promptly attended to.

For Flour and Rice Mills, Cavin Separators, Bevolving and Stot Screens, Stamp Batteries and all kinds of Mining machinery. Iron, Steel, Copper, Brass, Ping and Milling Machinery. Iron, Steel, Copper, Brass, Inventor of other meeting purched for all uses or burred and Manuhechuser of the celebrated Slot Cut Inventor and Manuhechuser of the celebrated Slot Cut Mining Screens a specialty, from No. 1 to 15 (fine).

PERFORATED SHEET METAL

Best and Chespest in America.

No imitation, no deception, no planished or volven
iron used. Only genuine fursais iron in Quartz Scucens.
Planished iron screens at nearly hell my former rafes.
I have a large supply of Battery Screens on hand raticable for the Hunkingron and all Stamp Mills, which I mitable for the Hunkingron and all Stamp Mills, which I will sell as 50 per rent discounts.

BATTERY SCREENS.

GREAT REDUCTION!

SAN FRANCISCO, CAL. 8 California St., and 21 Fremont St.

PARKE & LACY,

REPRESENTED BY

INCERSOLL ROCK DRILL CO.,

For Catalogues, Estimates, Etc. address:

THIED EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in ENGINEERS' CONTRACTORS,

MINING WEN

NOTICE 10

WITH MAPS, ILLUSTRATIOUS

.O

нястогу, 11 меченяют ме,

#### THE RUSSELL PROCESS COMP'Y,

Room 709. NEW YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President.

This paper is printed with Ink Manufac-tured by Charles Eneu Johnson & Oo., 500 South 10th 8t, Phildelphilat. Branch Offi-cee-47 Bose St., New York, and 40 La Salle St., Ohlosgo. Agent for the Pacific Cosst— St., Ohlosgo. Agent for the Pacific Gosst—

SEND FOR LATE CIRCULARS.

Зтаме, Раме, Веттьеве, Кетовте, Етс., Етс.

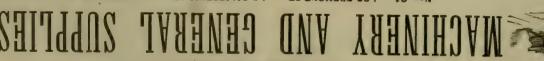
Successors to PRESCOTT, SCOTT & CO.

SAN FRANCISCO, CAL,

SALT LAKE CITY, UTAH.



PORTLAND, OREGON.



Machinery

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and Iron Working

**BOILER.** NOTJEZA

 $\mathsf{MA} \exists \mathsf{T}$ A NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER, DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL OF AT LEAST 25

Spring Valley Water Works, S. F., I 75 H. P. Selby Smelting Works, Vallejo California Cotton Mills, East Oale.

Southern Pacific R. R. Co., S. F., I 75 H. P. Selby Smelting Works, Vallejo Las Diego Electric R. R. Co., I 100 H. P. Los Abgreic Richeric R. R. Co., I 100 H. P. Los Abgreic Richeric R. R. Co., I 100 H. P. Los Abgreic Richeric R. R. Co., I 100 H. P. Los Abgreic Richeric R. R. Co., I 100 H. P. Los Abgreic Richeric R. R. Co., I 100 H. P. Los Abgreic R. R. Los Abgreic R. R. Los Abgreic R. Los A The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

PACIFIC IRON WORKS,

WM. H. TAYLOR, President.

PLANTS FOR GOLD AND SILVER MILLS

PLANTS FOR GOLD AND SILVER MILLS

WINING

other make, at the LOWEST

MACHINERY,

HEINE SAFETY

L. R. MEAD, Secretary. R. S. MOORE, Superintendent.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

San Francisco, Cal.

SAFETY,

DURABILITY, ECONOMY,

AND FACILITY OF INSPECTION and REPAIRS.

. 69,000 Нотее Роwет пом іл цае.

Guaranteed More Efficient than any other Boiler made. Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Jute Mills, and other places.

OE BUILDERS

As Builders of 120-stamp Gold Mill for the Ala Mining Company.

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roacting Furnaces at all kinds.

AIR COMPRESORS—Rope Power Transmission.

HYDRAULIC MACHINERY of Steamships, Brewerles, and Compound.

STEAM BOILERS of Polyer WATER PIPE a Specialty. Water WATER PIPE B SPECIAL WATER PIPE B

WATER TUBE

Manufacturers and Sole Agents for the Pacific Coast for

octoo in the power now to see the proportation.

\*\*Con pullary will not break in transportation.\*\*

Roller ZLIEN? F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS. Centrifugal

steam Engines and Shingle Machines. Mining Machinery of Every Description,

No. 45 FREMONT STREET, SAN FRANCISCO, CAL. SEND FOR CIRCULAR.

WINING PERFECT PULLEYS

BOILER,

Medart Patent Wronght Rim Pulley First Premium Awarded at Mechanics' Fair, 1884.

Sole Liensed themiacturers of the

Ben Francisco, Cal SAVAGE, SON & CO., 135 to 143 Fremont, St., San Francisco, GENERAL MACHINE WORK,

ARCHITECTURAL IRON WORK,

Ice and Refrigerating Machines, Shafting, Pulleys, etc.

MACHINERY,

when the stress of California, Use hard Artsona. Lightest, Strongest, Obsepose and Artsona. Lightest, Strongest, Obsepose and Stronger, Obsepose and Stronger, Strongest, Obsepose and Stronger, Stronger, Obsepose and Stronger, Stronger, Obsepose and Stronger, Stronger, Obsepose and Obsepos

Nos. 129 & 121 Fremont Street,

OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The wear and are metely nominal. A machine can be seen in working order and ready to make tests at \$20 Fromont (\$2\\\2000\) E' O' B'

FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

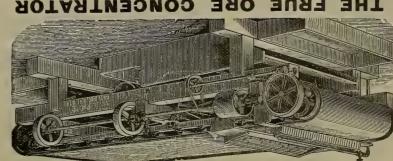
THE MONTANA COMPANY (Limited).

N. B.—Since the above was written the 20 Vanners baving been started gave such satisfaction that 44 additional Frues and more stamps have been purchased. The Mourak Chaires of your Free Vanness in a competitive trial with other 5, 1885. Dake Size: —Having tested three of your Free Vanners in a competitive trial with other similar machines umph), we have satisfied ourselves of the superiority of your Vanners is sevidenced by the fact of our having red twenty more of your machines for immediate delivery. Yours truly,

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; Febru-ary 20, 1885; September 18, 1885. Patents applied for.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

SAN FRANCISCO, CAL. Room 7, No. 109 California Street,



THE FRUE ORE CONCENTRATOR OR VANNING MACHINE.

COMPRESSED AIR and WATER POWER MACHINERY

NATIONAL AIR COMPRESSORS. RIX & FIRTH, 225 and 227 First St., San Francisco.



NATIONAL ROCK DRILL.

WINEBS, HOBSE MHIW'

CENTRIFUGAL ROLLER

EFISBEE-LUCOP MIL

All wronght iron. Nogears, no breakage. Antilonal footh unit...
One borse, will easily handle roke or wheer to a depth 300 Sold on this Coast. Has less, giving entire schisfaction to the prospector.

Price, complete, \$200. 150 sold on this Coast.

Drill.

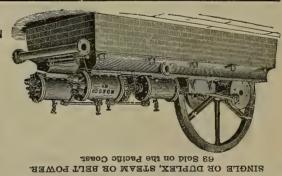
Drill.



KNICHT'S WATER WHEEL,

MILLS, PUMPING AND HOISTING.

Over 300 in use. All estimates guar-anteed. Send for Circular.





We have here the Stamp Mill in a cheep and simple form. The high drop of the old stamp, and the rate of the new of the stamps and the rate of the stamp and rate of the stamp and rate of the stamp and the rate of the stamp and rate of the

#### AN AUTOMATIC ORE FEEDER

ROCK Breaker, Goes with each Mill. We also have a suitable

Saveral Mills are now in the mines doing excellent work. The "Economic" is not only a mill for small mines, but we believe it is destined to superexer the old stamp in mills of the laterest capacity.

SAN FRANCISCO, CAL 34 and 36 FREMOUT STREET, TATUM & MUTAT

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc.

CHIPPED CAR WHEELS

IRON CASTINGS of all descriptions.

MEDAL AWARDED, MECHANICS' FAIR.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. HAS. E. STEIGEE.

San Francisco Cordage Factory.

TUBBS & CO. a rope, tarred manus rope, nay rope, var ne, etc., etc. Extra sizes and lengths made to order on short not Gonetantly on hand a full assertment of Manila Rope, Constantly on hand a full assertment of Manila Rope, Hary Gone, Whale inc. etc.

957 Market St., San Francisco. Mechanical Photographers,

FRISBERICAOP MILL COMPY,
And 461 Howard St., San Francisco, where a Mill can be seen in operation and orea will be reduced at reasonable rates.

All substances when ground leave the mill in a finished state—no regrinding being necessary. Automatic Feed. Wearing parts of steel and Forged from.

Elect and feel and Forged from.

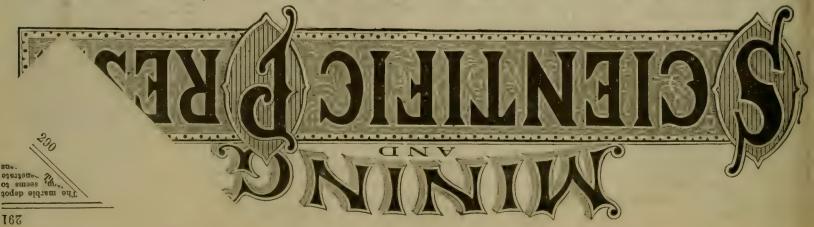
Steel and Forged from.

weight, weight, 800 the, 800 the 8

RUNNELS & STATELER,

Machinery, Models and Buildings

AND RAILROAD CASTINGS.



Illustrated Journal of Mining, Popular Science Gedelai News. pug

VOLUME LV

SAN FRANCISCO, SATURDAY, NOVEMBER 5, 1887.

Silver-Lead Deposits of Eureka, Nev. BY DEWRY & CO.

was made when the report was issued a few The engraving given herewith shows a section the engraving diverse on the hill. The drawing

stone included between the quartzite and shale.

proper stops at the divide south of the Eureka Hoisting Works. It includes the Jackson, Phoenix, K. K., Eureka, Etichmond and Albion mines, which are situated on the belt of lime.

work he describes with great minuteness the geological structure of Ruby Hill. This hill

Eureka, Nev.," by Joseph S. Cartis. In that

One of the monographs of the U. S. Geolog-ical Survey is on the "Silver-Lead Deposits of

The Tortilita Mining Scheme.

вісниоив.

one mining expert to examine the property.

The mearer they got to Arizona the less was That paper sent a representative which has been trying to sell stock on what the Herald proves to have been gross misreprenewspapers have been advertising the company, their names to a plan for selling the mine un-der another title-the Tortilita. A lot of ly a lot of Eastern people were induced to lend scheme in Arizona. This was the old Owl's Head mine, which, with all the machinery, was sold at sheriff's sale some years ago. Late-The New York Herold has done good work adding shifty of the Tortilita mining

where in places it measures as much as 15 the presence of a fiseure filled with clay, which is widest in the Jackson and Phonix mines, Phonix and Jackson, This fault is marked by with the exception of the bend between the formity, scarcely ever varying 5° one way or the other. Its course is also extremely direct, about 70° northeasterly and is of remarkable uni-

The subterranean structure of Ruby Hill pre- | the quartrite contact are very irregular. In structure of Ruby Hill, as well as the relations | known of the mines, and when they got there due the most important features of the present To the Ruby Hill fault or main fishere are in it where it is followed along its line of dip. its course, although there is not much ohange sure is very different at different points along The filling or material contained in this fis-

> is cut through, and there are signs of a dat undulation, the strata dipping to the northeast in the face of the tunnel and to the southwest at of Spring Valley. In this tunnel the quartzite Hill some few hundred feet to the northeast of the Isundula shaft, a shaft sunk in the debris ydnA lo shis sawdtnos edt ofni mur si doidy satislinal, which can be observed in a tunnel Hill. The average dip of the plane of this faultis

the various vertical cross-sections in the cut to shirts edt bas gib edt dtod teat wols lliw sonalg A .sonatsib eldarebisnoo vna rot rauts but few places slong its surface where a cross-scotion would show that the dip remained conquartzite and limestone contact, and there are There is no irregularity about the dip of the

7/18

trace the contacts of the different rocks in every nave been very extensive, but they have not seen so complete that it has been possible to some places, though these are not frequent, this contact pitches back. The quartzite on the ist and miner. The underground explorations -ologe edt ot teerest i fausunu lo serutael stae SECTION OF RUBY HILL MINES, EUREKA DISTRICT, NEVADA. EUREKA CON.

The contact surface between the limestone ore bodies. basins are intimately connected with the strike, forms large basins of an oval shape. bined with the undulations slong the line of same depth in all the mines, and which, com in vertical extent, which occurs at about the there is a great depression several hundred feet there are three large protrusions along the court, respective-oness of this contact, which cocur, respective-ly, in the Phoanix, K. K., and kichmond mines, Along the line of dip of this same contact, there is a read formession several bundted feet the main incline from the ninth level. Be-sides smaller irregularities in the quartrite, level of the same mine. This cave lies west of nated nearly on a level with the little tenth back at the end of a drift from the big cave sit that found below on the fifth. It also pitches fourth level of the Eureka projects out over

entionnal told. The line of contact between aroundered at numerous points in the and limestone on the couthwest slope accountered at numerous points in the unit on the southwest slope aroundered at numerous points in the unit of kindy Hill would be very near the top of the ground workings of all the mines of Ruby in the called the Kitsap. above ground, owing to the debrie, its ex-istence is fully established by the fact that it is Although this fault is not continuously traceable has been given, has had a very important bear-ing upon the structure of the mineral sone as well as upon the ore deposits themselves. them, owing to the presence of a fault. This fault, to which the name of Ruby Hill fault and the shale, like that between the quartrite and limestone, is very irregular, but there seems to be very little similarity between

northeast or hanging-wall side of this fissure. This body of shale, however, nowhere reaches the surface, as it is out off by the fault. compromise line, shale is encountered on the lower levels of all the mines southeast of the faulted or dislocated. At various points in the which it comes in contact, but is itself nowhere proton of its comparatively recent formation is the formations with taken throughout its entire course it is found to be the key to the solution of the structural zone, A of the ore bodies to each other. Although when to see mere are possible to the core of real and value and to be the step to the seer to th

on distance and it has succeeded in getting possession of a several thousand sores. known as the Wabsah Mining Company has been quietly buying up and lessing all the land obtainable in the vicinity of the locality named, For some time past a corporation silver, the specimens being taken from different to the ton in gold and about \$20 to the ton in discovered near the Chippewa river, Minnesota. The latest reports from the assayer return \$40 Gold and silver are reported as having been

Ludlow, the largest four-masted schooner ever On last Tuesday evening there was launched at the shipyard of Middlemast & Boole, Port

have been largely misrepresented. It is inter-Altogether, the whole affair was found to when the water is removed, more ore clares he would not erect a larger mill, unless,

sight were not in sight at all. The expert de-

four feet. The thousands of tons of ore in

shipped, it was not enough to pay expenses, or or band to be \$22 feet wide was found to be

ALBION.

eenim diw railimat lla ta would never have been "swallowed" by people were in the East, where little is known of mines or miners. The statements that were made but on the contrary were opposed to the scheme from the first. The main efforts to sell stock did not publish the statements of the company, harm to the mining industry. It is to the oredit of most of the Arizona journals that they TINIO PRESS received the circular sent out by the company some time since, but paid no st-tention to it, Such schemes do the greatest seting to note in this connection that a number of newspapers accepted the Officture Aun Sutzer-

Peters of Mew York in recognition of his well-known achievements in astronomical science. Cross of the Legion of Honor on Dr. C. H. F. THE Government of France has conferred the

found to be about 40°; near the surface, the angle of dip is much less, as the highest point of
the quartizite seems to be at the orest of an
antioinal fold. The line of contact between
quartizite and limestone on the southwest slope
of Friend 1911. penetrated (namely, to a depth of 1230 feet in the Richmond shaft) the average dip of the con-test of the quartzite and limestone has been irregularities and frequent breaks caused by faults. As far as the deepest workings have that on the surface, although there are many the Albion mine, the most northerly, they strike nearly east and west. Their course underground resembles in its general outlines these formations is to the north, but their course is soon deflected to the west, until, in rly location on the mineral zone, the strike of Beginning at the Jackson mine, the most southproach the valley is naturally to be expected pitch at a smaller angle as they apworkings of the mines. That these strats what greater in the upper than in the lower t an angle of about 40°; this angle being some ng mass of quartzite, a broad belt of mineral limestone, and an overlying bed of shale, all of which have been tilted so that they stand The main beds of Ruby Hill are an underly-

.eradiM edt bas saul Miners.

Translated for the Persa from El Minero Mexicano by

BY PEDRO CASTERA.

In the mountain nearest to the limit which divides the States of Guerrero and Mexico,

the most picturesque positions that I have ever seen. The little pueblo is situated on a bill surrounded with virgin forests inhabited by there is a little town named Jocotillan in one of

by desired with virgin forests inhabited by easyeges, and by enormous mountains which changes, and by enormous mountains which the the sun shines upon them, the hight at which the sun shines upon them.

The hight at which the sun shines upon them or method, but notwithsteading the want of regimethy, the whole presents a creatian fascinating aspect, insemuch as almost all the houses in gaspect, insemuch as almost all the houses are painted white sixing, and baye redimentally aspect, insemuch as almost all the house contage has and other twining-plants. Bach contage has a little garden, and the first appear and of a rather that of a union of nests and of nores at rather that of a union of nests and of the ning village. One afternoon I left the place for the houses attracted my attention, and naturally face for the account ing the sold of the stongery at the conditions were such as a sold of the stong of the sold of the stong of the sold of the stong of the stong of the stong of the stong of the sold of the stong of the

On the slope of an encomous berrace, produced by an ancient mine now added to do does of an encomous contact of does of an encome and at a hight which to be serve it caused vertigo, was a hight which to observe it caused vertigo, was a hight which to be almost covered with enredaders and flowers. A multitude of unknown plants were in the which aurrounded it, and in which may be any consequences of vegetation and flore with that profuseness of vegetation and that the tropical zone. That the tropical zone, Thais mail has trichness of life, movements and color which were glistening all the families of our Indian plants in the style of life, movements and women, the group of barreferos (miners) and women, the roughout the tropical zone, That of roughout the worte in contrast hat he sayle of dress which would be lead and the hids and serve the contrast which were in contrast with the movable or the country. They were of vivid colors, build but of the path hat one contrast was alowly decending, laughing merrilly, screaming and setting of the scond light-hearted group which was alowly denoted by which the path hat how complact the little course, and deer that for a counting and setting of the path hat its course was elowy decending, laughing merrilly, screaming and setting the path had its course was clopped had such the path had its course was of great which the path had its course was of great which the path had its course was of great which the path had its course was of great the total parts, to the path had its course was of great met by the instinct of preservation of that might cost me my life. I therefore decided to the instinct of preservation of that the total bear that set of preservation of the them of the mainer in the mainer of the instinct of preservation of that the course was decided to the main of th

We Might Roll Together

Trom precipies to precipies with greater freedom. It is but just, however, to eavy that thee dom. It is but just, however, to eavy that the house, do eavy the house, which all the time appeared as distant as it were floating among the clouds. It is only it were floating among the clouds. It is only it were floating among the clouds. It is only in the cities that inhospitable people are found; in the cities that inhospitable people are floand, in the country, and especially the serrance, hear of outlief to whom I was an entire stranger, received me as it I had belonged to their family, received me as it I had belonged to their family, and hear of their most intimate inhoman corrections and I learned that they were celeformed in the was what I least expected, and I was agreeably surprised. In this typice, and I was greeably surprised. The bride was a young agreeably surprised. The bride was a young and some 20 years, of exploerant form, with cheeks freat had young, it was what I least expected, and I was a man greeably surprised. The bride was a young and great deep black eyes, so powerful in their and great they vibrated the most delicate fiber gaze that they vibrated the most delicate fiber gaze that they vibrated the most delicate fiber they was a start was the they vibrated the most delicate fiber and younger.

HOL HEIL WAS AISO BIRCE,

A wan burn by the reads.

To scale the sky. I know not what, of poetical, the last hours of the evening have; I cannot comprehend the infinite melancholy that the soul feels when beholding the burial of the sun. I am unable to define the vague and profound sadness which possesses all nature when it takes sadness which possesses all nature when it takes are not sould feel when it is in the containt that of the center of light; but it is certain that every evening I observe it, and certain that A Wall Built by the Titans But it was a late of the ready of the ready of the ready of the ready visible for the quantity of those has which from the needs to the top of the bead adorsed it. Her bands and feet were very small; in a word, the girl was charming. The man was about 30 years of ag, robust, recollect it. They gave me wescal suite. The opposite the first the recollect it. They gave me wescal suite with which to drink to the health of that couple, to which to drink to the health of that couple, to which the fileity, to their prospective children and for all possible good fortune. I was drinking, then the the special possible good fortune, I was drinking, to all possible good fortune. I was drinking, nowever, not slicgebber in consideration of the fowerer, not slicgebber in consideration of the however, not slicgebber in consideration of the petrified grants, the sleep waste, the state of the form of the first of the state of the form of the form of the first of the form of detached above a horizon formed by an impantal of the form of detached above a horizon formed by an immense dark cloud, which was advancing as if it menses dark bulk man in mense dark cloud, which such a might be

The general office of Superintendend V. M.

The general office of Superintendend V. M.

Clements is an elegardy finished building, containing the draftcontaining the main office in front, the drafting-room and private office, two bedrooms, bathroom with hot and cold wafer, and all furnished in the very best manner. Mr.

Clements has neve his own telephone connecting with the main office in town and all outside points. Under his able superintendence both points. Under his able superintendence both gracked as two of the greatest ore-producers in the world, and every department is managed with that consummate department is managed with that consummate is superintendence.

of mobel, to the mines. It is a spleadid piece of medoranical work, and will be in running order in a few days.

Another great improvement is the construction of the company's own water-worke. Pipe has been laid for a distance of over 1000 feet and werety part of the company's own water-worke. The charmonical control of the company.

The new machine and every part of the company. The new machine all kinds of merity of the company. The new machine all kinds of merity and every part of the charmonical work, including blacksmithing, will be completed, and when finished and the consent machine and the original stances. The charcoal-bin is a large subtroller saws. The charcoal-bin is a large subtroller saws. The charcoal-bin is a large subtroller saws. The charcoal-bin is and two light, here is the convenent known to the earth in front of the works and is furnished with house, which is under the management of the ordering moderions for 70 men.

A large addition is being made to the boarding-world in the conservation of the works and its the order in the industries and the longing-house has accommodatione for 70 men.

In close proximity to the works a little city machine in the purity of the same of the same and the couplied by men employed in the buildings are coorpoined to another of confortable in the works are nowned to the works and several new and erection.

The general once of Superintendents of Superintendents of Superintendents of Superintendents of Superintendents. The superintendents of Superintendents.

Firster & Chalmers of Chicago and works like a frazer & Chalmers of Chicago and works like a charmer & Chalmers of Chicago and works like a charm.

Beginning at the upper story we find the new crusher, a massive piece of machinery weighing 16,000 pounds and known as size 9x15. Next sis found two sets of improved cornials rolling and the first story of its found two sets of improved cornials rolling from the first story of its found the works of the wo-section sizing secreen, two four-section sizing secreen, the secreen secreen

and maconnery in and aronno the Churker Hill and and and aronno the Churker than any casual observer would suppose. They have no peen in progress over two months and are not yet completed. The addition to the concentrating works has changed the building from its former proportions to a large and imposing the most complete and admirable manner. The machinery is all from the celebrated factory of Tracer & Chalmers of Chicago and works like a charm.

Hill machinery in and around the Bunker Hill

The Wardner (Idaho) News says: The vast alterations, improvements, extensions and other changes connected with all the buildings

Two Mines of the South Fork.

each time, it produces upon me a greater and each time, it produces upon me a greater advenger impression. That ever forget it. The actorist was so intense that I shall never forget it. The action of the barreteros, who were going to begin work for the barreteros, the brangelse, which the beal of the pueblo was ringisis, which the beal of the pueblo was ringing, the action of the beal of the wings) of the branches, the branches, the branches, the owner of the branches, the branches, the control of the approach ing storm, had only one voice, one accent, one the beads, and the dill sound of the approach, present it is the melancholly, the proture is luminous, spark-blatt and so to say, advillantation infinity, and so to say, advillantation infinity, and so to say, advillantation in particular in the melancholly, the proture is luminous, spark-ling, and so to say, advillantation in the was one present in the transfer of the medical particular in the action of the protuct of the medical particular in the transfer of the protuct of the medical particular in the temperature of the protuct of the action and with love. The sun had gone of the protuct of the protuct

awate the work of the state of laus river, near Reynolds' Ferry, and a consider erable portion of the river-bed thereby drained for mining operations; but probably few who have not been upon the ground realize the mag-nitude of the work or the enormous possibilities awaiting its projectors.

have ever worked as obloriders in it, testify to the asy.

All miners who know the district, or who have ever worked as obloriders in it, testify to the ease with which it can be worked, and to its exhaustless which it can be worked, and region on the Pathia perhaps the richest gold region on the Pacific Coast, has lain fallow, or peen merely call to come the particle of the parties of the particle of the complete of the particle of the parti

the Oolorado river at the foot of the Grand cantroal, is districted the to the A. & P., rail,
yon, and its nestest point to the A. & P., rail,
roal is distant 40 miles from Hackberry. The
surface of the district is very much broken, being traversed by ridges, crossed by supure, furrowed by carporne and guidelees, witch here and
there small valleys. Throughout its whole exbent are outcropping is degree or lodes, rich in
goid and other minerals, sasaying in gold from
\$5 to \$500 per ton, with occasional pockets and
first degrees, ance 1878; but, owney to the minor of Arizona, and has been worked, in a cerish degrees, ance 1878; but, owney to the minof Keolitites of transportation and the herefolore
of Keolitites of transportation and the herefolore
of keolitites of transportation and the herefolore
of keolitites of transportation and the precedency
and no ore are anon as would cover cost, which
and no ore save anch as would cover cost, which
are none but very high-grade or could be utilized,
and no ore save anch as would cover cost, which
are anone but very high-grade or we would be aground,
and no ore save anch as would cover cost, which
are very great, has every been mined or taken
was very great, has every been mined or taken
was yery great, has every been mined or taken
and the core are and as would cover cost, which
are a series and as would cover cost, which
are a series are and as would cover cost, which
was yery great, has every been mined or taken

the Colorado river at the foot of the Grand can Its southern boundary is about 50 miles north of the town of Kingman, the county seat of Mohave county, Arizons. The district touches

shout 50 miles in length by 10 miles in width. lo sers as seesadme tointaib blog taerg edT Gold Basin,

The fact is well known to our readers, eays the Union Democrat, that a tunnel has been run under the peninsula formed by the Stanis-

Mr. S. F. Emmons, the geologist in charge of the Rocky Mountain Division of the Geological Ore Deposits.

Survey, recently read a paper before the Col-orado Scientific Society which was of unsual

The Charles Dickens.—The long-expected orders from London to start works at the Charles orders from London to start works at the Charles Dickens mine failed to materialize, but in structions of an opposite nature were received has been closed down for the winter. Various has been closed down for the winter. Various rumors are aflost concerning the matter, but rumors are aflost concerning the matter, but ing to the cause of suspension of operations ing to the cause of suspension of operations the payment of a portion of the purchase price, The recent sale is said never to have been fully the prepare sent to the directors by Mr. The adverse report sent to the directors by Mr. Severe arraignment of the protest by the property, may have had something such the matter. Parties both in Bonenza and Challis claim to have heard the report read, or portions thereof, and say it censures severely or portions thereof, and say it censures severely market at an exorbitant figure.—Ketchum lish market at an exorbitant figure.—Ketchum lish market at an exorbitant figure.—Ketchum

able.

Mr. Richard Pearce heartily indorsed Mr. Bicmons' paper, and said its conclusions were entirely in accord with his own. He pointed to pseudomorpha as evidences of such aubstitutions are suggested, and stated that he had many years ago found in a Cornwall mine a pseudomorph of tin after feldspar. Other evidences were cited, while the value of the evidences were cited, while the value of the

He Bocky Mountain Division of the Geological Surey, recently read a paper before the Cological incettes. It was devoted to a discussion of the Geological method in which veins were found and filled read a paper before the Cological incettes. It was devoted to a discussion of the of him one year ago. It was an account of him one year ago, It was an account of him one year ago, It was an account of him one year ago, It was devoted to a discussion of the read a paper legical of the rocks of the continuation of the local paper discussed the method of vein or fissure the growing being of the rocks of the copy of the contraction of the rocks of the copy of the contraction of the rocks of the copy of the rocks of the rocks of the copy of the copy

The propositions upon which this company
The propositions upon which this are operating are plain, simple and precities,
and if adhered to cannot but resultant benprofit to the stockholders, and of resultant benefft to the county.—Mokave Miner.

enough to accomplish this of his own resources does not need to mine, and for this simple reason, the want of water, this rioh region has reason, the want of water, this rioh region has great known wealth, aurrounded by comparative solitude and almost wholly undeveloped, a domestic company, composed of responsible trick lies, and who possess a free knowledge of the problem of its development. The comparative such and which are supplied, and who pesses a free knowledge of the problem of its development. The comparative such as a such a such that it is development. The comparative problem of its development. The comparative problem of its development, are about to solve the problem of its development. The comparative such as a such that it is development, the comparative such as a such that it is development. The comparative such as a such that it is development, the comparative such as a such that it is development. The comparative such as a such a such that it is development. The comparative such as a such as a

#### River Mining in California.

The Camp Steadily Improving.

Mining Outlook in Colorado.

has recorded some important rich discoveries, and has shown a great improvement in some of the and has shown a great improvement in sproduction of all mines, while the falling off in production of old camps, either in tomnage or value, has not been important in any case. There have not been more in the manner of the some promising camps have been decloped, or rather to a failure of the mining property to fulfill its promised. In the been due rather to a failure of mine-owners to been due tather to a failure of mine-owners to been due rather to a failure of mine-owners to mining property to fulfill its promised. In the mistakable evidence of weelth in the rather should have not been due in the rather for an anistakable evidence of where a good deal was promised.

Beginning on the north, in Boulder county, there are designating on the north, in Boulder county, the statement of the provinced. Colorado with a more promising outlook for mining than the present. The past enumer has recorded some important rich discoveries, There probably never was a season closed in

mest in the bear when, to the county, the county, the county, the county and the county and the county and the county are consisted by the county and county are county and county and county are county and county and county are county and producers. County are been county are county and county are county.

It could not be found at a depth count of county are county.

It count are county are considered are considered are considered are not the county are considered are are valued are considered are considered are are valued are are considered are are valued are considered are considered are considered are are considered are are considered are are considered are are valued. Aspen above the county are are considered are are valued are are considered are are valued are are considered are are valued are are considered are are are valued are are considered are are valued are are considered are considered are are considered are are consider

Denver Tribune Acpublican.

A Wier Restriction,—The Southern Paoific Company is an effective advocate of the apperance. It positively problibite tippling on the part of its employes, and a refusal to comply with this increase the ordender to lose his position. The Woodland Democrat thus tells how it proceeds in the matter: "It imperatively and constantly insiets on having sober men to run its trains as engineers, conductors and brakemen. Let a man under the to diverce and brakemen. Let a man under the to run over one of these divisions and he would be prevented from going out, and as sober man under the property in the hands of one who has a sober man put in place. The officers of the Southern Pacting to the property in the hands of one who has a shear property in the hands of one who has a shear by put his powers under the influence of the little and brown jug.' A man seen to be drinking some property in the hands of one who has already put his powers under the influence of the little and brown jug.' A man seen to be drinking someone in the powers under the influence of the little and brown jug.' A man seen to be drinking someone in the powers under the influence of seen to be drinking someone in the powers under the influence of seen to be drinking someone in the powers under the influence of seen to be drinking someone in the seen to be drinking someone in the seen to be drinking to be seen to be drinking to be seen wall in every branch of indestry. Moc. and the self lates of stream or their employers in any wall of life.

The Little of Section of the comployers in any walk of life.

The Little of Section of Section of a convortion of the District Out at the Libber Court, and the capitalization of the incorporation is \$1,500,000, divided into 150,000 abares at the Clark of the incorporation is \$1,500,000, divided into 150,000 abares at the capitalization of the section of the amount of stock of the incorporation of \$1,500,000, divided into 150,000 abares at the corporation of \$1,500,000, divided into 150,000 and the section of \$2,500,000, divided into 150,000 abares and the section of 120,000 abares and the section of 120,000 abares and the section of 120,000 abares and a convening capital. The property president, 72,667, 12, C. Chambers, 1001, L. W. Colbath, 100, making a total of 120,000 abares and a convening capital. Lhe incorporation of the section of the se

which cerries the work must be placed to any otherway of the problemuse of our triangle.

There is nothing mysterions about machines for making prope molding. The principles of all the machines are contained in a common server the machines are contained and contained are cutting table, and, by mounting a string label of the tool-post, you have a full-fledged machine shall be a contained to contain a string label, and the string has been a state of the string the molder. As one variety molder is a factor of the string which about a beauty work and molder will do spiral turning or make "rope molding," Owners of machines of its and the lathe will do spiral turning or the first molder. The contained the machines of the machines of the machines of the order of anything row in their line. They put their time barbarous nations, and make trade secrets of anything new in their line. They put their time barbarous nations and put up five on a it is contained to the interference of a string the first of the contained of the nucli the first of the string by burying their bones they are aging to stad make they are string and much like the same bones they are agit to stad make they are string and much like the same bones they are agit to stad on the string of the same bones they are agit to twart of use it to entury is a very poor cent.

or want of use.

The nineteenth century is a very poor century for anybody to make money by secret processes. The man who keeps to himself is processes. The man who keeps to himself is the man who is up and coming with his methods, who tells every body how he does a thing, is the chap who gets shead, "Wby?" Because he tells us his way, and we, together with every body else, give him suggestions with every to body else, give him suggestions with every body else, give him suggestions which set him to thinking, and he improves his machine and Troduct.

How River, and the more and the product.

The man who makes the best fertilizer, the best baking bowder or the best furniture varies that is one straid of putting his formula on nish, is not afraid of putting his formula on orety with closed doors is in the dark. He will get left and naver be missed.

The majority of trope-moiding machines use a single cutter-head. The cut is against the single cutter-head. The cut is a they may. This leaves it very rough, it is very hard work to smooth up after these machines. The only true method is to use two cutters on the posite directions, and they will out smooth and posite directions, and they will out smooth and clean.—Am. Cabinet-Maker.

Mistakes of Eastern Capitalists.

words hareh enough to denounce mining as a smooth electron the words hareh enough to denounce mining as a smooth electron the word and by whom? The questions the the word will be described by whom? The questions then enough to a cartile pursuits of any point she as this mer. The questions then end to the followed by whom? The questions then end to the control of the word of t We have often, says a correspondent of the Idaho Springs News, heard capitalists denounce Idaho Springs News, heard capitalists denounce mining as: "I put \$10,000 in a 'hole' in Colorado. A friend of mine went broke on a mining vorture out there." In fact, they cannot find words harde outough to denounce mining as a swindle. It is very plain that men who utter such talk as this have been ''sold'" in some next sails as this have been ''sold'" in some

Oleremont to prove that the edge is continuous in the direction and of the same rich reaching the solution of the same rich distinguished of the same rich duality of Garrie mine, which has been querhead by two of the enterprise, which has been tounded by two of the enterprise, which has been tounded by the enterprise, and the content of the distinct of the distinc

Wood Turning.

head, while at the same time the work is given and must be at the work in order to and motion. The cutter-head must be set at an angle with the axis of the work in order to allow the cutter-head to slign with the system of showing the couplete revolution in 10°, the cut the complete revolution in 10°, and a few and a few angle of the work will stand at an angle of about 32 degrees out of the cutter-spindle. The angle for any size the cutter-spindle. The angle for any size or the cutter-spindle. The angle for any size or fine with a few size of the work of the work, forms which is the circumference of the work, forms which is the circumference of the work, forms the base of a right-angled triangle, forms which is the circumference of the work, forms which is the circumference of the work, forms which is the circumference of the carriage of a right-angled triangle, the length of any size of the circumference of the carriage. Spiral turning is again to the front, and the methods of making it will bear a great amount of improving. The principle of about every machine for making rope molding, as it is oftencalled, is to rotate the work beneath a outterbear, while at the same time the work is given and motion. The emeta-thead must he set at

Morey's Foundry and Machine-Shop at lacerville is building a large air compressor for to El Dorado big tunnel.

A \$15,000 Bridge is to be built scross the -San Juan and Hol-

BLACK WALNUT IMITATION.—A most remarkable imitation of black walnut has lately been manufactured from poor pine, the quality and appearance of the article being such as to delete act of the article being such as to detection, except upon very close examination. To accomplish this, one part of walnut peel extract is mixed with aix parts of water, and with the wood is costed. When the material is ball dry, a solution of hicknomete of pressed with water is rubbed on it, and the made walnut is ready for use.

KEEP AWAY.—The Tuscarors Times-Reviews asys: The labor market, particularly at the says: The labor market, particularly at the mines, is largely overstocked, and to-day thore is as surplus of at least 100 mon who are uncased to obtain employment. Houses are secuce, able to obtain employment. Houses are tull, and it is time to call a halt of immigration until next spring, when, in all probability, a number of other properties will be started up, thus insurvited my the says of the sa

American Architecture has been a coused been by persons who have not understood the been by persons who have not understood the form. On the contrary, we have more originality or righestly in architecture of originality in architecture, or a shousen decided use not neitly than we have expended it in a shousen day. They have expended it is a shousen day or with their well architects have needed has not been a spur to invention or a demand for noveltels, but some intensity of constitution or a demand for noveltels, but some intensity of their work acquired consistences and the public which most older nations have. The wheel which most older nations have. The want of an old architecture, by which the teste want of an old architecture, by which the teste of the intelligent is formed, means the want of a very important influence.—Ex.

No Timer vor Charcoal,—Acting Secretary Muldrow has approved the action of Commeioner Sparks in declining to amend the circular of the Department issued in August, 1886, donain so as to permit the taking of burned and dead timber and the pinion pine from lands to other than ene of the smelting turnaces. The case came up on the petition of A. C. Dake and other than for the beattien of A. C. Dake and other came up on the petition of A. C. Dake and other pared by Samuel B. Berry, their attorney, that process must shut down and thousemed to the perion out of employment unless the process must shut down and thousemed to be thrown out of employment unless the bone sendelsers employing the "water-jacket" process must shut down and thousemed to be thrown out of employment unless the burned for obserceds and used at the Denver, classified and other Colorado furnaces.—

Georgelown (Col.) Courier.

BUILT-UP TIMBERS.—The estatement that a plants of 12x12 inch beam, built up of 2x12 plants epiled together, is stronger than a 12x12 inch plants epiled together, is stronger than a 12x12 inch solid timber, will strike the novice as exceedingly absented. Every millwright and carpenter to be believe that it is so, at least he has been taught to be ever tauste to be believe that it is so, at least he ever tauste to be obtained to the solid timester the solid to see why a timber will be tronger timested. The saw, and if this word there are separated by a saw, and if this word have been separated by a saw, and if this word the conjugation of the configuration of the obtain its weakest link comes into the consideration, the other timester have knots in them or are sawed at an argie to the grain, so that they will split load, and prints and a built-ng timbers have knots in the the to word the time of the sawed diagonally notes a comparatively light load, the beat margie to the grain, so that they wasken transited of one plant, and plants whose grain running in a brisced and strengthened by the outside out will be braced and attengthened in outside train as places a braced by the outside out will be braced and attengthened in the cuber pieces appraised to and attengthened by the other pieces appraced to and attengthened by the other pieces appraced to the daving the outside out will be a placed to the daving the grain running in a spiece of the daving the grain running in a different direction.

A. T. DEWEY.

#### Mines and Land,

sorts of statements are being made about land in out-of-the-way places, and people are buy-ing without personal examination. being sold at prices far beyond their value. ers cannot realize a reasonable profit on the in-vestment for years. Lots in new towns are land is being sold at figures where the purchas places prices are entirely too high. Acreage feature in many of the transactions. In many imate business proposition, But there is, at the same time, far too much of a speculative California is all speculative, for much, and in-deed most, of the land-buying is done as a legitni basi to start to stol to essenting editadi It is by no means intended to convey the idea that are more visionary than the old mining schemes of the speculative era of 20 years ago. being advertised and carried out in this State the truth is that there are land schemes now There is a general impression that invest-ments in mining are speculative entirely, while investments in land are always legitimate. But

to \$50 an acre for land worth much less in acre-

the places ever come to anything than mere

properties were considered very deceptive, but wrong in pursuing the same tactios in relation to land. Glowing reports concerning mining

highly improper; but there seems to be nothing

sway to start new companies, it was considered

paper towns.

When blocks of mining stocks were given
When blocks of mining stocks were given obarging \$5 for each set of papers, he realized \$40 an acre for the land. And, moreover, some lots are sold. The lot may be worth more if per acre. By "giving it away" in lots, and age. In one instance within the knowledge of the writer, the land cost the original owner \$7.50 who give the lots away. They charge \$5 for each deed. By cutting up the sores into lots and obarging for separate deeds, they realize \$40 laid out. But it is a good thing also for the gaied sawot wea ynam edt to smos ai stol tasw away lots in new towns to advertise them. This appears a very tavorable thing for people who They have even of late commenced to give

Strange to say, while land-buying has now plored, for some people are pretty sure to be financially injured in the long run, Both forms of making money are to be dein these days land speculation is the favorite. personally examine land, just as they should do mining property. There is just as apt to be speculation in the former as in the latter, and The truth is that intending purchasers should land or new towns are accepted without orts of statements concerning new tracts of

of the past, it is too true that their race is not entirely extinct, though they have in a large number legions, as during mining excitements progress all over California, We do not mean by this that there are now no wild-cat claims or mining sharks, While they do not in real estate, but there is steady and profitable of stockholders. The quartz mines are doing specially well. Many new ones are being found, and many old ones are being reopened and developed. There is no boom in mining as and developed. in them rather than what is in the pockets mines here are being worked for what there is any names of mines in California. Most of the ing share market, quoted daily, shows scarcely affairs with no stock offered for sale. The min men and carried on as legitimate money-making than now. They are mainly conducted by skilled The quartz, river and drift mining interests of California were never in better condition at all in the way of advertising mining property. every hand, while one scarcely sees anything mining, while formerly the proportion was reversed. Land and lots are being advertised on There are now 20 apeculators in land to one in many respects the two have changed places. run into a speculative era, mining has gradual-ly settled down into a legitimate business. In

enough of either body was recovered to show the semblance of a man. Abe Berlin was badly injured by a fall in the King of the West mine, dodies were literally torn to ahreds. Not doors and bine are as full as they can be. The company is now getting all the custom ores it can conveniently handle. was deposited, and by some mysterious means the destructive element was exploded. Their nate men went where 50 pounds of giant powder the death of two men, Jeremish Lynch and Daniel O'Brien. It seems these two unfortuvestments in that direction. There are plenty of opportunities yet to make fortunes out of curred at the Anaconda mine, which resulted in Saturday night last a tremendous explosion oc-MINING ACCIDENTS.—At Butte, M. T., on when these people get here they will find that there is plenty of mining going on, and doubtwearve moved to pastures new.

Ir is reported that the recent rich strike in

THE Eureka Sentinel says that the Eureka Con.

less some of them will be willing to make in-

are using every effort to attract population,

do not. The agricultural counties of the State

latter advertise it and push it, while the miners

s well as agricultural, but the owners of the

are many thousands depending upon the mining industry. There is mining ground to be sold

mining. Still, in the mountain counties, there

many of the residents know nothing at all of

ing operations. The agriculturists now far out-number the miners in California, and a great

some of them may interest themselves in min-

ettle intend following agricultural pursuits,

who go provide themselves with return certifi-

year. The present exodus to China is caused by the desire of the Chinese to celebrate their New Year in their native land, and nearly all

in round numbers, is 20,000, against 15,500 las

61,822 departures during the first nine months of 1886. The net gain for the State this year,

departures, 45,349, against 77,352 arrivals and

lend for the nine months: Arrivals, 65,991;

months there arrived overland 45,954 persons and departed 34,019. Totals by sea and over-

and Japan taking 5162. In the same nine

during the same period numbered 11,330, China

20,037, of which number 12,461 were from China and Japan, and the departures by sea

teri edt gairub etniog lle mort see yd slavirra

ing the same quarter in 1881 the arrivale by sea were 5517 and the departures 5661. The total

The arrivale by sea during the same quarter

people are arriving every day. During the past three months upward of 17,000 people have come here everland. The arrivals for September (6938) were the largest since July, 289

sands of actual settlers expected. Indeed these

addition to these people, there are some thou-

of them are mere sight-seers, attracted here by the winter climate and the scenery. Still, in

State of which they have heard so much, with a view of settling here, it satisfied; while most

of these people are doubtless coming to see the

"booked" with the excursion managers. Many

Upward of 100,000 tourists are said to have

California sets in from the Eastern States.

Settling Up the State.

ni noitonut Intesu bas elderonod na sa sid gai the mine-promoter, and inciting toward him a feelings of distrust, we should accord him a status commensurate with his deserts, reogniz-

Instead, then, of sapersing the good name of

about results that in the end prove beneficial to

serve both parties to the transaction, bringing

to the salies of mines possessing all this possession to the salies of behils of salies of the salie

gent and satisfactory way. The successful ne-

answering questions put to him in an intelli-

proper manner, the person having it in hand being capable of explaining the situation and of

the business has to be presented to them in

most other properties, be sold by advertising. The owner has to seek a purchaser in other ways. Capitalists have to be interviewed and

suit. Mines cannot, like a piece of land or like

rug ve apparent in mining as in any other purpercial activities, anch arrangement has beging a series of the age, its utility being

oo bas setries industries and con

to but a common in these modern times, and to which recourse is so generally had because it adds to both the effectiveness and the economy

no noisivib adt to amrot esodt to ano tud si nam

Selling mines through the agency of middle-

all concerned.

the line of business in which he is engaged.

With this month the tide of winter travel to

1882 sarutaq ab and the departures 4282.

e months of the present calendar year were

While most of the people who come here to

while the mining counties are doing little.

influence on his mind.

The Mine Promoter—His Status and business. What he is told by those interested to mislead him has, or ought to have, but little

L'unctions,

and worked off on the uneuspecting public, and the whole business manipulated with the sole aggerated way, the stock thereafter being pooled a the property apt to be incorporated with a big nominal capital and advertised in a grossly exthe artistic work of swindling begin; only then general thing, sells on a commission or acts as agent for the original owner, Mot usually until the mine has passed into second bands does purposes than by the mine promoter, who, as cates buying these properties for speculative which the investing public have so much suf-fered have been put up oftener by the syndiit should be remembered that the jobs through be watched, and, so far as any business trans-action is concerned, avoided. Mow, while such distanor has in many instances been deserved, middlemen are regarded as a useful and honor-able class, the mine promoter is generally looked upon as a mere adventurer—a man to It is a little singular that while most other

.tnemeganem ebisai edt gaideirae le mis 

companies, though not always are these Having lost their money, the investors place

cent of its value. In nine cases out of ten the losses aretained in this class of transactions come through the directory of incorporated and sold their mine for not more than one per the same had they spoken the truth throughout and in doing so have very likely lied a good deal. But the public have had nothing to do with these parties and would have suffered all the blame on the vender and his agent, who, in their endeavor to get a big price for the prop-erty, have no doubt set it up for all it is worth,

seribed to this the most common cause.
It may be thought that the offices of a pro-

retail, but a middleman? What else the oisl world, the entire peddling fraternity in-cluded. What is the merchant, wholessle and performed by the great trading and commer who performs the same service in kind that is ducted. Hence, recourse to the mine-promoter have the means and know how it should be conhas to commit the undertaking to others, who ousiness rightly, and to make a success of it intelligent and effective way to the notice of moneyed men. He has neither the time, the experience nor the facilities for prosecuting the na ni ti soubortni neve vo lles et neitiseg a ni ating a sale of mining properties. But this again is a mistake. It seldom happens that the mine-owner, however valuable his property, is -ijogen ni laijuease ton era namelbbim vo retom

296.

MINING SUMMARY—From the various counties of California, Nevada, Arizona, Colorado, Idaho, Montos of California, Nevada, Arizona, Cash, Wyoming, 296-97, Eancisco Stook Board, Notices of Meetings, Assessments, Dividends, and Bullion Shipments, SOO. Compositors, Sect. (GOOD HEALTH,—What Foods Make the Teeth GOOD HEALTH,—What Foods Make the Smoking; How Fabigue Operates; Whooping Cough; Danger in Mold, 2005. banker and the peannt vender? All distribut-ers of things made or produced by others— every one of them, yet all useful, each in his Themes Tunnel, 295.
SEFUL, INVENENTATION.— How to Choose SHIP, Blades of Pottet Morlves; Largest Car Worlst in World; Wood Fibers; Substitute for Hydraulic Cement; Blackboard Composition, 295. barthounder, undependence of Birch Bark; Rare persture; Products from Essence of Birch Bark; Rare Minerat; Occasuming Smoke, Sq. Minerat; Occasuming Smoke, Sq. Mechanick, Andrews Standard, Company Minerat; Occasuming Without Welds; Progress of the Production of Chains Without Welds; Progress of the Production of Shains Without Welds; Progress of the Production of Chains Without Welds; Progress of the Production of Shains William Welds Though Shains and Locomotive Builds with The Welds; Production of Shains William Shain EDITORIALS.—Silver-Lead Deposits of Eureke, Nevader, The Tortilite Mining Scheme, 289 Passing Vader, The Mortilite Mining Scheme, 289 Passing the Overlitte Mining Scheme, 289 Passing the State Heis States and June, 1998. The State Office, Mines and Lead, 292. The State Tortility of Mining Scheme, 288. The State Office, 288. The State Office, 1998. The State Office, 1999. The State Office

places of business; the others itinerating dealromo; the first having a large traffic and fixed ware; there, one doing the same with the labor-saving sewing machine or the many-tinted moting the sale of dry goods, provisions or hardway. Here is a man with his many clerks pro-

ers, yet all alike go-betweens, engaged in pass-

Amador county a number of mills are tempora-rily idle. The Keystone, Spring Hill, Gopber, nI awob tune ot bad eve hills have had to shut down. In In some of the mining regions of the State the effect of want of rain is beginning to the disobes, A there being lack of water in the disobes, ferent from those employed by the rest of the se being the one among so many especially deproducer to the consumer. The guild being then so large and withal so respectable, why single out the mine-promoter ing their comestibles and their wares from the

and how uniform the experience of all who have been accustomed to buy fruit in this, or for that matter in any other market, so uniform ornia, and yet it is even here a common one; made. The complaint of adulterated wines ought never to be heard in a country like Caliand yet the charge that they do so is constantly abla goods under other than their own brands, tion. We do not say nor would we even insin-uate that our merobants use false labels or ever brotherhood as to justify such invidious distinc-

nearly harmless, as every one expects they will that no one expects the package or box to be equally good throughout. But these decep-tions, because of their universality, become

examined by his own experts, on whose reports the Alsaka mine, Pike Oity, Sierra county, emalone he relies; that is, if he understands his praces a \$30,000 pocket. the proposing purchaser to have the property his agent. These representations may induce to handle no one is deceived, however grossly false his statements. Mines are, in fact, never bought on the representations of the vender or gerate the value of the property he is seeking -gaze ed it; recomoter; if he exagbe practiced upon them.

the bial need evad working very smoothly. There is an effort to reduce miners' wages which the miners naturally resist. From some mines a number of men ton era srisfla galaim odsbI to straq emos aI

tion of others to that Territory. Donbtless there will be a large number of prospectors go to Alsska in the spring. have been working there has turned the atten-Alaska, the return of a number of miners who ni besolo sad nosses gainim et slosed in Although the mining season has a starting to the mining of the starting of the starti The closing of some of the mines and the ad-vent of cold weather is the cause of the depart-Butte, M. T., there being too many there now.

more or less men out of work. As soon as the rains come the mills will start up.
A good many miners are said to be leaving

The stoppage of these and other mills throws

and others have stopped. The Seile is running by steam, and so is the Bunker Hill, The Plymouth is running only part of the stamps.

Passing Events.

Business Announcements.

TABLE OF CONTENTS.

san francisco: Saturday, Nov. 5, 1887.

SCIENTIFIC PRESS PATENT AGENCY.
A. T. DEWEY. G. H. STRONG.

Entered at S. F. Post Office as second-class mail matter

Our lakest forms go to press on Thursday evening.

Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Lомрои Aceut—Alfred E. Ann, 63 and 64 New Broa

Advertising Rates.

Terms of Subseription. With the subscriptions will be subscriptions will be subscriptions without cash in advance. All arresrages must be paid for the fact of \$3.50 per annum.

Office, \$20 Market St., N. B. cor. Front St., S. F.

DEMEX & CO., Publishers.

SCHENTIFIC DRESS

MINIME

estal meseng See Advertising Columns.

For Sale—Triumph Concentrator. Special Meeting—South Comstock Con, S. M. Co.

The Sucre tunnel enterprise has attracted from the last stop of the company has been actively deaft in the last stop of the Exchanges for nearly 10 years, and the last stop of the has a stracted from the last stop of the last s

nas been \$117,926 co per annum. The expenses boireg emas ent rot emooni ten egareva ent bna the total income to the distribution of a second into the officers of the same are also \$1,030,420.33. The total expenses for the past three years have small three to \$260.04. tunnel, and that everything connected with the great work was in the condition. The income of the company in royalties paid by the tributary mines from September 30, 1879, to March 1, 1857, was \$1,027,376,49. From other once encrees an amount was received which brought the courses an amount to the courses and content was the course and the course of who has been secretary of the company since valo has been secretary of the cometructing the number of constructing the number of constructing repairs and incidental expenses, without adding interest; was, at the time of its completion in 1882, a little over \$5,000,000. Including interest since the beginning of the work, and appenses since 1887, the date of the report, and expenses since 1887, the total would be about \$10,000,000. The report of the vice-president in May, 1887, 1887, and expenses since the report of the vice-president in May, 1887, and expenses since a since was nearly 31,000 feet of the report of the vice-president in May, 1887, and there was nearly 31,000 feet of the report of the vice-president in May, 1887, and there was nearly 31,000 feet of the report of the vice representations. On this coast, however, we are familiar with the matter. A little book has been published by Theodore Sutro giving a full account of the transel, its history, prospects, etc. According to the sworn testimony of Pelham W. Ames, who has been secretary of the company since TRI of the Sutro tunnel or of the Comstock mines. beld by thousands of persons, principally in the Eastern States and Europe; yet very tew of the latter understand either the nature and value it and also because of renewed activity in the mines of the Cometook lode. The 2,000,000 seneres of stook are widely scattered, being denisys synibescorq exuscicerot to vonebneq edd again excited considerable interest, owing to eved year the affairs of the company have at the Exchanges for nearly 10 years. The chartes sold in 1879 as high as \$6 50, and last year as low as six cents per charte. During the

tunnel as an airway for the ventilation of the mines is also set forth at length. The highest temperature of water in the sump in the Yellow of 16,467,355 tons. The advantages of the the drain-boxes at the tunnel's mouth, 3,799,-018,820 gallons of water, representing a weight to March I, 1882, there were discharged through of reasoning in the cost of gaining as any officers of the sould be so that a surface by definition of the sould be soul

For each ton of ore extracted from the mines Jacket shaft, 3065 level, was 170°, while the air showed a temperature of 126° Fahrenheit,

along the Cometock lode yielding \$40 per ton in gold bullion value, the Sutro Tunnel Com-pany is entitled to a royalty of one dollar per

nan employed by mining companies transported through the tunnel, extracted from the mines, the company is entitled to 25 cents per mile for each ton transported, and 25 cents for each ton, and two dollars per ton for all ore-yielding bullion the gold value of which is over \$40 per ton. For the transportation of ore or waste

north and south. the right of way, not only east and west, but to and from the more to the drawn and a more in, the to the more in the form the more in a more

The bight of the tunnel is generally from seven to seven and one-half feet. The width throughout is eight feet at the top inside of the surrounding timbers, and from nine to nine and one-half at the track rails on the bottom

**GBTAVITJUG** 1987 Acres ORTUS SYNAG ONAJ MAIJAT MALLAT Oa NMOT yano H SCALE: 4000 FEET TO ONE INCH 1 THAHS SHAFF 2, ¥ N E 13°250 001'ZZ Journ Luteral Arrow VIRGINIA None amu YTIO 0  $\alpha$ 

## Alaska Mines.

Sutro sees, after a settlement of the litigation, a most flattering prospect for the future.

pany to execute an income or other bond equivalent to the amount of each loan. Mr.

suggested as the most advantageous for a setsuggested as the most advantageous for a settiement is for the stockholders to advance to
the company, in same proportion to the number
of shares held by each, as am sufficient in the
aggregate to pay the sum which may be agreed
upon by both parties, and to develop the propaver and in return for such advances, the com-

attangement, which Mr. Sutro thinks almost assured, the company oan secure as entite a entite release and save their valuable property by a cash payment to the mortgagees of \$1,000,000. The payment to the mortgages of six per cant. The plan arrangement looks is not per cant. The plan secured as the anost arrangement as the secure secured as the most save.

The acceptable to all parties. It reason to nope with the acceptable to all parties.

From figures turnished by the secretary of the company, it appears that on July 1, 1887, the company, it appears that on July 1, 1887, the original of the company, it appears that on the company of the com

to nalg a bestimd as days, and submitted a time of in many will with the second of the

Sutro has, according to his report, put things

in hand for the case into the case of the case in the case in the case of the

company is a forcolosure suit brought by mort-gagess in London, England, to which, up to Jan-uary, 1887, the attorneys who then had the case

The only dark cloud that hovers over the

freight and passengers; the road to connect with the surface at this point by a system of elevators

reilroads there'so from the terminal and continually another and the terminal and set in the base as a stituting compressed air or cable cars in place of water-power. Extension of the tunnel, not only through Mt. Davidson, but to an outlet only through Mt. Davidson, but to an outlet read through it for the transportation of read track through it for the transportation of freight and passengers; the road to connect with

resirve and yet besteeping supersonal in the book in the projects and yet besteeping and statement of the parameter of the project of the pro

little room to doubt that with the increase in ore-ornshing facilities and the large area developed in the mines during the past 12 months, the income of the company on ore extracted in 1888 will exceed \$500,000,

the company, when freed from pending complications and liabilities, will not exceed \$80,000 per year. Mr. Sutro thinks there is but

of the current year the daily royalty collected will reach \$2000. The total annual expense of

ran in shafts.

erty, and, in return for such advances

resisted by the miners, a large majority of whom are American officens, and if persisted in will certainly end in bloodshed, and suggests that in view of the imminent danger of such troubles the recommendation to Congress in obabalt of a ernor eays that any attempt of this kind will be of his report his Government is likely to at-tempt next summer collections of the miners' li-cense provided for in the Canadian law. The Govterritory, and has suggested that on the strength Ogilvie, who was sent out by the Dominion Government last spring to locate the boundary line between Alasks and the Morthwest Territory, and sugar the Shitsando river is in British terrifory, and has answested that on the strength Swineford of Alaska says it is reported that Mr. It seems there is apt to be trouble over the boundary question in Alaska, since gold has been discovered on some of the rivers. Gov.

joint commission to definitely settle the bound-ary line be argently renewed. Jar. Ogilvie will winter in Northern British

ary line between Alaska and British Columbia. This matter is a very important one to the The royalty so far Columbia and will take observations for the from the mines on purpose of defining the letter meridian, which out \$1,000,000. In will form the basis for defermining the bound-

PROFILE OF THE MAIN SUTEO TUNNEL-20,489 FEET.

PLAN OF THE SUTRO TUNNEL AND ITS BRANCHES.

Somet to angle to another to

its mouth the main tunnel is 14 feet wide by 10 the mouth the mouth the mouth the mouth its praceding of the timbers. For some distance trom the mouth its mouth, was as follows:

One of the accompanying engravings is a plot measuring from its mouth, was as follows:

One of the accompanying engravings is a plot measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the accompanying engravings is and also measuring from its mouth, was as follows:

One of the pearing from the increasing from its mouth, was accompanying and aggregated and aggregated

the manufacture of firearms," said Mr. Mock, "by a man named Root, who was employed in Colt's pistol factory. He was a day hand at \$1.50. Colt made him superintendent of the works at a salary of \$10,000 a year, which was, and is, probably the largest salary paid to any factory man in the country."

#### Щесньиюе**г Б**роврезя,

#### Skilled Mechanics.

We out in the country."

We out in the country."

Colling out iron chains from the solid bar with contracted attentions. The welding is one of the recent mechanical operations that have attracted attention. The periations that have attracted attention. The periations that have attracted attention. The periations that have a the rolling out a chain is similar in some respects to frolling out a chain is similar in some respects and follows and having them out bogether in a chain and having them out bogether in a chain and having them out bogether in a chain and having the links are separated the chain mold. In the latter operation the links are separated to divide the spaces equally in four ways, and then, giving as little clearance as possible, which them, giving as little clearance as possible, which them, giving as little clearance as possible, which the stail of the chain removed, and contain the secontain the manner by means of four converging way the dies are made continuous obtain in this alogous manner by means of four converging way the dies are made continuous obtain in this court of the dies are made continuous obtain in this way the dies are made continuous ob land in the court of the chain in the court of the dies. To produce a continuous of lowering way the dies are made continuous by having causing the dies are made continuous by having meet accurately in place. Proper clearungels, are able of the dies priving the dies are the matrix freed, as the court of the links at right angles to each the clear having the dies partially press or the links at right angles to each other. Dreaking the dies partial dies partial dies of the links, which, alter a thorough shudling in a tumble barrel, come out highly finished and polished for the market.

The Recent the market of the market. In some of the great ship-building establishments of the first manners of the Cycle only meanable of the direct ments of the Cycle only meanable of the direct shall be clude only meanable of the direct shall be called only meanable of competence; and these always command the highest wages. Strikes among them are unfighest wages. Strikes and yethemselves and known; they form a class by themselves and known; they form a class by themselves and the control of the contro

strue and the company and the manteever use every precaution in advance to proteever themselves.

When the Cunard company was formed they
asked Mr. Napter, the engineer, to estimate on
the engines for the proposed steamers for the
Actantic mail service, but he declined on the
ground that the work was greater than he had
over undertaken, and the be clouded. He
were the company, and was present that he
the event of salitars, might be clouded. He
he woll not oblication, in his own way, and
hampered by specification, in his eagines, unhampered by specification, in his eagines, unhampered by specification, in his eventually
the would not do poor work to cover an error
assement on this basis was accopted,
he would not do poor work to cover an error
the eagines were seet up in the works, steam
was applied to them, and every movement was
the leading mechanics who built the engines
was applied to them, and every movement was
the leading mechanics who built the engines
was applied to them, and every movement was
the leading mechanics who built the engines
the leading mechanics who in the teament
are appointed the engineers to the contrary, by Dr. Lardner, that the
toins to the contrary, by Dr. Lardner, that the
tions to the contrary, by Dr. Lardner, that right
the shall be contrary, by Dr. Lardner, that the
tions to the contrary, by Dr. Lardner, that the
tions to the contrary, by Dr. Lardner, that the
tions to the contrary, by Dr. Lardner, that the
tions to the contrary, by Dr. Lardner, that the
the mind of the standard to the engine of the contrary to the engine of the contrary of the engine of the contrary to the engine of the contrary to the engine of the contrary to the engine of the engine
were rate.

The the contrary desired to the engineers were of the engine of the engine of the engine of the engine

The men who built the engines knew what The men who built the engines they could best and never forced them. Years afterward, when steem navigation on all seas was common, Mr. Napier said that his success was mainly due to the incelligent and able mechanics who were employed in his works, A mechanic binself, he could appreciate the merits of the men who worked under his direction.

difficulty in obtaining employment, at home or abroad, where there is any work in progress. This ought to be an inducement for young men who are learning trades to make themselves masters of their business.—Ex. Skilled mechanics of steady habits have no

A YANKEE PISTON IN A BEITHSH STEAMSHIP.

We made a note, last Pedrusty, of what we thought was quick time in making a new pist thought was quick time in making a new piston to the steamship Alaska, the work being done at the Delatmater Iron Works, in this receiving the other was 100 inches, weighed 15, 000 pounds, and was 100 inches, weighed 15, 100 pounds, and was med and work, but the belone as well as if two months had been taken in doing it. The sequel to this job pary's offices that there was, after a voyage across the Atlantic, no evidence of anything the mater of the year of Deglish make and a steel on the piston was put in its the words, on the bis did not court. The piston was put in its stand for the year of Inglish piston was put in its bis on the piston pounds of the 3d of July place, and its there yet, for all we know. Thus and the piston of the piston, "set a naught by the builders," he mater no doubt will last to replace sevend we have the fiston was put in its bright English relatives have for all we know. Thus and we have no doubt will last to replace sevend we have the piston, "set any the mater of castings that our mater and of the piston, while and the last to he piston, but this done will be the out the piston was put in its bright English relatives have been the builders," the mater of the piston was put in the piston, we set the some things that our pringent properties and the piston was put in its pringer by the piston, "set a naught by the pullers." One of the piston was put in the piston w

TNTERCHANGEABLE LOCOMOTIVE MACHINERY.

The principal proprietor of the locomotive works at Rome, N. Y., is T. G. Mock, a man of rugged appearance, but in reality one of the most genial of mon and a furst-class mechanic.

These works are now turning out locomotives upon definite plans with interchangeable parts, as that any piece of the machine can be exchanged with the same piece on any other local comotive of the same type. This is considered a great advantage, "The interchanging of a great advantage, "The interchanging of machinery parts was started in connection with

tion of such literature in the state of its an inventive in the state of interests of the discovery by taking photographs of several persons present, as the price of the second, and in a few minutes produced a picture during the meeting. The price of the powders as prepared by the Berlin firm is esteed to be very low, and hence it is thought that they will readily come into general use. It would be of interest to learn tow the danger attending their storage and use to be grarded against. According to the Philiach is to be grarded against. According to the Philiach phis is to be grarded against. According to the Philiach is to be grarded against. According to the Philiach is to be grarded against. According to the Philiach in the distribution of section residing at 10 West Thirty-fith a physician residing at 10 West Thirty-fith same thing and made a private and eminently satisfactory exhibition of the same.

TORETELING EXAMPLES.—In a paper radiatorory exhibition of the same.

Tore of the Japan Seismological Society by read before the Japan Seismological Society by read before the Japan Seismological Society by an animals often show just before exhipance of the strength of the Japan Seismological Society of the Japan Seismological Seismologi

CHENTENING COGAINE.—The sunnounced artiforsal formation of cocaines, by a German chemforsal formation of cocaines, by a German chemist, is thought to be a first step toward chespening the production of this important albalond.

The method of preparation in this case consists
in heating benzoylecgonine, with a slight excess
of methylicotide and an equal volume of methyl
alcohol in a sealed tube at 100 degrees Cent.

This is not, exactly speaking, an artificial foraction of methylicotide and the first of the force
base of another substance contained in the this bylittle or no cosine, but the courseion in the tono
leaves, which has hitherto been a by-product of
base of another substance contained in the occobase of another substance contained in the bis
product crystallizes in transparent prisms and
the acetate and sulphate also crystallize in
product crystallizes in transparent prisms and
the acetate and sulphate also crystallize in
product orystallizes in transparent prisms and
the acetate and sulphate also crystallize in
soid acetate the said the said in sealed the said open
composed into methyl chloride, benzoic soid and
course or said in sealed the said open.

THE SEMBE OF TEMPERATURE,—Dr. Gold.

The SEMBE OF TEMPERATURE,—Dr. Gold.

Sorhin Physiological Society plates illustrating
the topography of the sense of temperature.

The sense of best and oold was determined to the whole surface of the body, and arranged in a series corresponding to 12 degrees of intensations of the contemperature is called than that of the theorem the called the more externed than that of the the that hold is more extremities; that that the transfer of the called is more extremities; that that the transfer of the confusion of the that the transfer of the called in more called in more sense of temperature is less soute in the median line of the body; that the distribution of this sense of temperature is less soute in the median line of the body; that the distribution of this ferment from that of the sense of touch; and that ferment that of the sense of touch; and that the sense of temperature.

The sense of temperature is the sense of touch; and that the sense of temperature.

E. Mourlot, Paris, obtaing from essence of birch bark, by rectification, an essential oil, which bark, by rectification, an essential oil, which bark, by rectification, an essential of being fastal to "insect life," and an electrically insulating tarry substance. These two products substances as to produce an anti-oxidizing material and an insulating substance capable of the same applications as aboutie. Among the other untroffications as so boutie. Among the other ingredients employed, in addition to the products from the essence of birch bark, are esoutings from the essence of birch bark, are esoutings, and an insulating ingredients employed, in addition to the products from the essence of birch bark, are esoutings, and parish and products from the essence of birch bark, are esoutings, and principles, kaolin, zino white and red ocher.

RARE MINERAL.—One of the rerest uninerals in the world has probably been discovered in the mountains along the river, directly below the city of Chattanooga, Tenn. It is the white, rust-proof iron ore, hitherto found only in gweden. It is said to contain 65 per cent of pure iron. The bed, distinctly marked by blose soms, is fully six feet thick and of great length. An assay is to be made in the East, where specimens have been sent.

Consoling with a fibrout special apparatus by at-bending with a fittle common sense to a few simple rules, Suppose we have a battery of first boiler, shut the damper nearly up and fire up one-half of the furnace, close the door, open the damper, and go to the next boiler and repeat the firing. Consumme Smore,—Nearly all smoke may

#### Scientific Progress.

Why Some Lakes Are Salt.

Why Some Lakes Are Salt, where she saltes as one American Igles, says Populor Science Monkly for July, it is too patent to require many words of explanation. It is probable that, when the sea, the lake beams had been already formed, and came up, therefore, boinfuring of water. In the northern and castem part of the continent, where the supply from point of the solf, being continuously carried asserting to be an imperceptible continuously carried as yesporation, as the Pacific Slope and the country about the salt, being continuously carried as gions, as the Pacific Slope and the country about the caste in the salt had been as diluted as continuously sark until, on accountry about the caste in the caste in the caste in the country about continuously sark until, on accountry of the district of the district of the case of the supply, the water level of the lake account of the table the case of the supply, the water of the Medicas of the case of the supply, the water of the Medicas of the case of the supply, the water of the Medicas of the case of the supply, the water of the Medicas of the case of the supply, the water of the Medicas and the current through the strait of the Case and one account of the table the scoeding the supply of the table the supply in the cannets as the current through the strait of the Medicas of the case of the supplies the more such and the supply and their supplies to being the most general of all redoubly we their salt the order of the table supply. The Usah bear and where the solic supply and their where must streams tall into supply, and their waters must solic the order of saline supply, and their waters must solvent has been reached. The Usah more and more saft more saft must be constant to the case of the supply, and their waters must streams tall into supply, and their waters must solvent has been reached. The Usah more the description, the lakes whose only outlet has been reached to be one filled to be supply and the solic sability of supply such their waters and where the case o

when the state of the state of

NEW COSMICAL THEORIES.—The opinion has lately been expressed by Mr. Proctor that the lately been expressed by Mr. Proctor that the absolutely as nothing effects of air and water are absolutely as nothing compared with the denalized forces which must have been in operance in the description of what was once there, but, besides these from when the earth was young—that the oxyears in the forces when of the sir are but a residuum of what was once there, but, besides these carb's life, there were immense quantities of earth's life, there were immense quantities of earth's life, there were immense quantities of carbonic soid gas, of sulphurous soid, sulphurous and the stand other five. Mr. Proctor thinks there were immense the form the form of wapor; in fact, the pressure of water in the form of wapor; in fact, the pressure of the pressure so far turned into steams as then existed only laver the washove the boiling point at the present stmosters of the ocean strong the form must acted the washore the boiling point at the present stmosters at high pressure in the sir must have been sten; the washow at high pressure aurises of the ocean sten are all the form when the form must have the washow the water upon the sir must have been sten; in the sir must have been sten at high pressure and inthensity how, and the same falling then must have been soids, and falling on intensely heaved rocks.

Instrument of the form with destructive soids, and falling on intensely heaved rocks.

Learnar Anneode Photogorapy as A Markeur pot out Instruction of Learnar Anneode Underder photography as a mother long stride forward. Hitherto the only means of photographing at night have been by means of calcium, or electric lights, All of these demanded more or less paraphernalis, and recently Prof. C. W. Vogel has communicated to the Berlin Physical Society an ingenious distruction overy, by which it is possible to obtain in metanta the Berlin Physical Society an ingenious distruction of the Berlin Physical Society an ingenious distribution of the Berlin in the formal physical society and in metanta in the darkest places. Messue, Gesticke & in the Berlin law of prepared a mixture of Bulverized magnesium, oblorate of potash, and pulverized magnesium, oblorate of potash, and pulverized magnesium, which, when the paintended to produce the mixture of the produced of an accommendation of the produced of an accommendation of the produced of produced of a produced of a produced of the produced INSTANTANEOUS PHOTOGRAPHY BY A NEW

Solder is a continuous of the continuous of the configuration of the con A MACHINE THAT WILL MARE EITHER WIRE OR CUT MALE.—Mr. Philip Leonard of Sharon bas invented a mail-machine which outs either a wire or a cut nail with equal facility. One of thine, and has proved to be a remarkable mathrine, and has proved to be a remarkable mathrine, in many respects. Its construction is chine in many respects. Its construction is wire-nail machines. With it, cut nails of square escrion, with either a diamond or a square escrion, with either a diamond or a common nail. The change from wire to cut mails may be accomplished in a few minutes.

Gridner, in a lecture before the Society of Atribute Gridner, in a lecture before the Society of Arte, in England, pays the following tribute to the blackemith: Those who have stood by the foreign and watched the sparks fly as the skill full smith deltly bests, and watched the sparks fly as the skill complete, and watched the sparks fly as easiest of sli orige, and watched this box seves to complete, but who standing by the side of a raffer, But who standing by the side of a raffer, But who standing by the side of a make series of the committee of the patient study and dexterity required before he is able to make a manigular and before a those or teaching can iron unless to precise or the complete of the sculptor, sools are as primitive as those of the sculptor. His sholls are as primitive as those of the sculptor, and with hammer and anvil, forge and bellows, a bench, a vise, and a few chiecis, he has to a bench, a vise, and a few chiecis, he has to form the work of the subborn iron effects that form the may rivel the work of the loom in delicacy, or form the may rivel the work of the loom in delicacy, or form the may rivel the massive entrance-gates to a park.

pared with present results, shing prophecy oer, tainly cannot be considered to have been extraversent, Five years ago, even, the North Travegeot, steel plant made 50,000 tons of the cold second-class abeal rais a year; the output now is 150,000 tons, and this is one of the old second-class plants. Five years ago the south plant of the company's works were making an output of 5200 tons, and yet the works are practically the same now as then, no larger converters, no facility gained by the practice and the familiarity gained by the practice and the familiarity fained of 1000 tons of rails a day. This is only at the rails, and occasionally putting out at the rails and occasionally putting out at the rails and occasionally putting out at the fair of one of the rail has advanced so that the weight of the rail has advanced so that the weight of the rail has advanced so that the weight of Commerce.

PROGRESS OF THE PRODUCTION OF STEEL RAILS.—When Mr. Holley was completing the later Besemer plants in which he was engaged, he made the prophecy that when the workmen should become thoroughly acquainted with the new works they would succeed in making an output of 40 tons of ingots a day. When compared with present results, this prophecy oer tainly cannot be considered to have been extending the manual parad with the succeeding the second of the s

through rollers having "deep ribs" in the declare, eat gradually into the ename. Use through rollers having "deep ribs" in the difference on one rection of their length, the projections on one rection of their length, the projections on one rection of their length, the projections on one rection of their length is the correspine of the other, and may be combed in an apparatus similar to the corner will be esperatus similar to the corner will be esperatus similar to the corner will be experated from each consequence of the corner where the corner was a series of the corner will be experiented from the corner of the corner will be experiented from the corner of the co

the grant of the state away from the gam and on the gam and on the gam and on the gam and the the grant of th

Gronzertz Smoking, and Clonker Smoking, in speaking of this vice, —The Chicago Most, in speaking of this vice so prevalent in that oity, warns parents in this wise: It your sons smoked tobacco the result would be bad enough, a stunting to their trowth, anervasing to their proves, and they inhale, but they one odes of chanically prepared pspen, optima, and the very poorest quality of tobacco. The and the very poorest quality of tobacco. The effects of the prevalence of this volument enough in the first of the prevalence of this volument enough in the city of the prevalence of the stone perceptions. There is just powerful enough to make that defense the facets upon the nervous against the single powerful enough to make that defense that despetite before they are confirmed appetite before they are mand a confirmed appetite before they are come when he eigerette will not satisfy them. Then it will either be whisky or morphine.

How It will either be whisty or morphine, some years, Prof. Mosso of Turin finds that when father of Turin finds that when father is carried beyond the moderate starge, at which it is decidedly benedicial, it sub-jects the blood to a decomposing process the blood to a decomposing process the blood to a decomposing process in the start of substances and into the circulation of healthy animals, inductor uncasiness and all the signs of excessive of the subject, fatigue has its pleasures and of the order on joys, these being the construction. Mosso's the start of the period on Italian soldiers, and they proved, among the other results, that the start are and power of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to those of the amodern warrior are fully equal to home the presence of the amodern warrior are fully equal to home the presence are and summand and an estimation are an estimation and a

perpension of the total description of the spinning and weaving of the office of the spinning and weaving of the office of the spinning and weaving of the total description of the description of the description of the description of the descripti

octoling to a statement of Mr. Miles, a well-coroning to a statement of Mr. Miles, a well-coording to a statement of Mr. Miles, a well-common to a statement of Mr. Miles, a well-common time and sand sand, is universely and successfully employed as a substitute for mixed with common time and sand sand successfully employed as a substitute for mixed with common time and sand sand successfully employed as a substitute for an engineering experience of some eix years in the merites, and he found it in all respects anner to the best Rosendale bydraulic cement for roots, in an experiment to rest the attent of 14 inches in thickness, without sand, and even for roots. In an experiment to rest the strength of this product it was found that a block of it, immersion in water for four morthes, bore, without the substing, or military, or splitting, a pressure out creating, crumbling, or splitting, a pressure out 50 pounds per square inch. It is thought that, by the addition of pulverising-mills to brick-yards, to utilize the waste and broeken that, brickes, a profitable manufacture might be ourbrickes, a profitable manufacture might be oner-

BLACKBOARD COMPOSITION.—Make a thin paste of lampblack and flour emery with shellac variet, and apply the same to the wall or board to be coated. Should the mixture be too thing to be too thin to the thinned down to the right consistency by adding alcohol.

#### GOOD MEALTH,

What Foods Make the Teeth Strong.

with the backed on the forms of the company of the control of the company of the

## USEFUL INFORMATION.

How To Choose Shr. —A writer in the kinds of been stilled in a state of the contract, speaking of the various trinds of been ship, gives the following directing the state ten flower the speaking of the various trings in detecting the spratical of the state ten flower the following directing state in and lack-lacter condition, die state in and lack-lacter condition, die concern the tumb and december, and year may at the tumb and december, and very and lack-lacter condition, die speaking, you may at seal the tumb and december, and very seal seemly roll them over and over, and you will seemly roll them over and over, and december, and very generally will instantly origin laws to the flower the ten strands, only pure charcoal; heavily dyed ailk will metalty origin and very pure of the control, heavily dyed ailk will metalty origin and the present of the flow, greagy sah. If, on the control, heavily dyed ailk will metalty origin and the present of the flow, greagy sah. If, on the control they are of a natural luster as the point of the flow greagy sah. If, on the control they are of a natural luster as the point of contact, you may well be assured that the point of contact, you may well be assured that they are of a natural luster as the point of contact, you may well be assured that the point of contact, you may well be assured that they are of in the wear. Good silk must be out the fast point of of the flower at the point of of the flower it is the green on the contact the they are secure. They will not be seen to direct the presence of iron as at they are secure. They also imperceptibly the presence of iron as at the your of the flower, they release the price of iron as the flower of the presence of iron as at the could be as any or with the top the bender of the order of the presence of iron as at the world of any order. Or such a secure to prove the december of iron as at the world of the sample will be the presence of iron as at the world of the such in the presence of iron as at the presence of iron as at the

PEADES OF POCKET-KNIVES.—The blades of really good black slik.

From See steel, but those for first-class pocket from sheet steel, but those for first-class pocket from sheet steel, but those for first-class pocket from sheet steel, but those for first-class pocket steel steel, but those for first-class pocket about 40 pen blades per hour. There is a pathorn 10 blade put hour, and sont of blade, but the experienced workman sort of blade, but the experienced workman sort of blade, but the experienced workman shell of hand being aufficient graides to exact restly refers to either, bis accuracy of eye and serily refers to either, bis accuracy of eye and serily refers to either, bis accuracy of eye and serily formed by grinding. The steel back intended to guide engaging had backed the steel blades are wirelined. The steel back intended to guide engaging for the steel blades are fempered, bave one from the forges the blades are compored, bave father the blades are tempered, bave father the same in cold water. The backers at the backe in an ordinary coke fire, the operator heating two at the care spring the one on a free tempering. By repeated the trade, not one one ordinary coke fire, the operator heating two entering to tempered, having reflects at spreas. The backers in an ordinary coke fire, the operator heating two entering the samper of the blades are spring; a coke fire, the blades are spring; and with the same different and of the operator nor the cast iron, and with the same down end of the machinary condition, and with the same down end of the blades are ground on Sheafied the blades are ground on Sheafied the steel blades are ground on Sheafied the side of white lands wheels of a broade ling five on on the cast iron, and with ished on wheels of white lands with rested face. The blades are ground on Sheafied the blades are ground on Sheafied wheels of white white wheels of white we want of white the same wheels of white white white white white

## Емегуетергия Потея.

The Diggest engineering scheme, yet suggest on give the history of Suggest engineering scheme, yet suggest engineering scheme, yet suggesteeled of Saithington, who, stadying the use of parametric these, has received a point at which history its oach be also been pet forth by colonely J. H. Fieros he hopes to show that a the successive fit oach began to be a so to consider the suggest of the su

Harlicons consists in the desails of the work.

Barlicons and Locomorive Buledius.—

During the last I3 years the United Sestes has
doubled its railroad mileage, while in 20 years
tripled the iron roadways of 1867. That
secord is nothing more than a fair evidence of
also beat the world in locomotive building, not
also beat the world in locomotive building, not
only in the number turned out from our ahops,
but also in the running and wearing character
of the machines. As an evidence of this it may
be stated that we not only supply the large
of the machines. As an evidence of the large
increasing extent of our railroads, but we lury
increasing extent of our railroads, but we lury
countries. There were 54 locomotives for foreign
from the United States during the large
from the United States during the large
and use ourresponding period of the precedduring the corresponding period of the precedand 9379 respectively.

The Electric Light in Euger is is
and 9379 respectively.

strange that while the British papers are notstrange that while the British papers are noting the general failure of electric light installations throughout the Kingdom, the ancesses in
the same direction that are won on the continent
are largely won by British engineering firms,
are largely won by British engineering firms.
The electric light has seen its darkest days in
Great British, and it will not be long before the
gas companies over there will see that the laws
are so altered that they may take in the twin
system as rapidly as the companies on this side
system as rapidly as the companies on this side
are doing.

The Lorenzer Dam in the World is to be be an Unit screeze the world is the San Majeo caryon, about some the will see west of the village of San Majeo. The dam will consist of a solid wall of course from hillside to hillside. It thinks all of course from hillside to hillside. It will be 700 feet long, 170 feet high, 175 feet will be 700 feet long, 170 feet hick at the top. The reservoir, which will be formed by this dam, will have a capacity of 32,000,000 gallons, and some time in the future will be connected with the San Francisco watershed by a tunnel we miles long.

TUNNEL UNDER THE EAST EIVER.—It is said that the plans for a tunnel under the East river, trom Long Island Olivy to Minth avenue and Thirteenth street, in Mew York City, are always to the consent of property-owners to tunnel of the property-owners to to tunnel of the will have a nader them. The width of the tunnel is to be nucles them. The width of the tunnel is to be only the middle the light 21 feet. It will have a double track, and electric motors will be employed. The farm is to be favored to the plane of the plane of the plane of the plane of the plane.

The Mew Thames Tunner.—The new Themes tunnel is to be worked by cables, on The American plan, with American carriages with and carteances. The line will be 34 miles somey, and trains will be run on two minutes seed trains will be run on two minutes seed trains will be can the Brooklyn bridge, as an independent switching motor will be used at seah and of the cable line.

A PRACTICAL EXPERIMENT WITH ELECTRICITY is about to be made in Nevada City. The mach oblinery in George G. Allen's foundry is to be trun by electricity for a week or two, in order to give mining men an opportunity of being courinced that such power can successfully be utilized as motive-power, and at one-half the utilized as motive-power, and at one-half the cost of steam.

The Longest Tunner in the World, commenced in 1878, and finished in 1878, drains the Schemnitz mines in Hungary. It is 10.27 miles in length, or about a mile longer than 8c. Gothard, with a hight of 9 feet 10 inches and a breadth of 5 feet 3 inches.

II BINING BUMMARY.

CALIFORNIA.

MANDOR QUEEN.—Amador Loges, Oct. 39: Nective Delia Mandor Loges, Oct. 39: Nective Delia Mandor Loges, Oct. 39: Nective Delia Mandor Mandor Loges, Oct. 39: Nective Delia Mandor Mandor Mandor Loges, Oct. 39: Nective Delia Mandor Loges, Oct. 39: Nective Delia Mandor Mandor Mandor Delia Mandor Mando

and other purposes, and the task of putting up as and other the purposes, and the tesk of mill in the test future is revived.

MISCELLANKOUS,—Lessley's mill has a heavy contract for lumber for the Kennedy mine, which will keep the mill unning to its unmost capacity to fill in the sunderstood that this bill of lumber is for the test of the sunderstood that the mill probably be placed back in the state of the works must the median over the north bath. There was made shape this winter, a month so to the mill and addressed to the sunderstanding the ledge. Mr. Anderson to go ahead with the decoperation of the claim. Tunnels have been to the mine and adjacent lands. Word has been for the mine and adjacent lands. Word has been to the mine and adjacent lands. Word has been to the mine and adjacent lands. Word has been for morth end, disclosing a large ore body, it is mow proposed to turn a tunnel as the south end, which will have a distance of 900 feet to go to reach the north end, disclosing a large ore body. It is mow proposed to turn a tunnel as the south end, which will have a distance of 900 feet to go to reach the north end, disclosing a large ore body. It is foot of the Alpine shaft is specied with the despending slowly. The water is being longered the large of the south end, it is thought that it will take from six weeks to two months to reach the bottom.

Oblaper Reviews.

Orlect deep, it is thought that it will take from six weeks to two months to reach the bottom.

STARTED UP.—Angels Record, Oct. 28: The Matson mill (five stamps) started up last Saturday. Matson & Son have about 500 tons of \$50 ore at the mill, and the cleanty is bound to loom up.

proceedings (1994). The water to engine weter at the training to the property of the property

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

The capacity is three for the country for the concentrates arrived from the libracy week, and are now in full blast. Concentrates arrived from the Peacook this week. Hereafter the mill will run on regular time. The capacity is three from the Medicaday soid a footbase of concentrates arrived from the Peacook this week. Hereafter the mill will run on regular time. The concentrates arrived from the Peacook this week. Hereafter the mill will run on regular time. Wells have been on the property in a few days. Kullin & Wells have made a slaver strike in Gold Hill district, which has caused no small degree of excited the first was made a slaver strike in Gold Hill district, which has caused no small degree of excited the first was made a slaver strike in Gold Hill district, which has caused no small degree of excited the first was made a hard feet in width, the strike for two sand a half begins of the contract of the opposite for the degree of the district of the public just yet. He states that one of the district is and were stated to the public district. Abid the fact of the country.

The pump repaired, and everything at present is nurge monthly. During the week and was estally taken Camp beinge and Golorge well. The new camp between Camp to footby under the Reced gravel mine got out of far integration in the Onton, at the country.

The pump repaired, and everything at present is nurber pump repaired, and everything at present is nurge to pump repaired, and everything at present is nurge to pump repaired, and everything at present is nurge to pump repaired, and everything at present is nurge to pump repaired, and everything at present is nurge to pump repaired, and everything at present is nurge to grave in the bound ying across the shall. The nurse of the charter than the first inchest week in the bound of the opposite turns of an oak utee, not far because that it is turns of the country. The count at a depth of about the week. The mine is one the count at the far inches the pump will keep the water out at the far

proceed body of good ore has been discovered, Jying a strata of slate. This body of ore lies on be sound supply a so-stanp mill for the shaft, and at the lowest call, and at the lowest call, and at the lowest call of the shaft, and at the lowest call and shaft and be traced for over too feet in length, and which shaft in the large the property as constant mill deterable to the care of the large of the lar SAVAGE.—On the 700 level are extracting ore of good grade from the wines which connects with the good grade from the wines which connects with the seast in the south drift and extracting ore. Wo. I crosscut on this level has been advanced asylest, and according ore. Have inhebed remained fair one his faster. Have inhebed the sind sense has faster between the 800 and 850 levels, and are now enlarging the working stations at the 850 and 400 levels, and are now enlarging the working stations at the housted 500 tons of ore during the week and have shipped 492 tons to the Mexican mill.

COM. CALIFORNIA AND VIRGINIA.—The usual control of the Mexican mill.

FIRCOF.

Nevada.

SALIME VALLEY.—Cor. Inyo Index, Oct. 27;

The rock from Erwin & Fullet's claim, and from The rock from Erwin & Fullet's claim, and from the rock from Erwin & Fullet's claim, and from the rock of the

FROM MAMMOTH.—Invo Assister, Oct. 27: 182.

Maxwell and D. C. (Charlie, Albright came down from Mammoth this week. They both instend to winter there—the former working the Mammoth mine, which he has lessed, while Charlie will work first lobe old Foulke claim. Mr. Albright was among the first locators in the district, and has never yet lost Salth in its mines.

UNO.—It is reported to us that the Uno Mine, in Massus Valley, is being steadily worked and that the Dassus Valley, is being steadily worked and that the Excelsior mine sitnated a short EXCETSIOR—The Excelsior mine sitnated a short present with fattering results. A new blacksmit the shop has been erected on the premises during the week, and other improvements will soon follow. We expect flattering news from this mine shortly

THE SHEEP RANCH MINE will close on the first of the month for repairs, and there will be a general "lay-off" of hands for a short line.

simpped age one so the wextend min.

COM, CALIFORMIA AND VIRGURIA.—The usual mine and the usual amount of ore is being extracted.

The battery and pan milts are running from the too too do red airly. The Morgan milt unns 140 and the Eureka 100 tons daily, the latter baying inmakes 400 tons daily, the fatter baying inmakes 400 tons and the fatter baying in the season of the Eureka 100 tons daily, the latter baying inmakes 400 tons daily the latter baying in makes 400 tons and part of the fatter baying in the samount being holested. Water power connections with the battery milt will be made by the medium of the part of the p

Drawn Politicities on the sour the south Washoe District.

Just on the too level has been run 33 feet in ore of dift on the too level has been run 33 feet in ore of levels, making a total length of 63 feet last length of 64 feet is the decision of the west to run with the vein.

Just of the west to run with the vein rate of the action of the west to run with the vein rate of the art seet in the roun with the vein rate of the art seet of the connection. This drift is rise of feet to connect with the consecut, was in 32 feet and to run on a fortest level than the crosscut, and that is the connect on I rule seet in the connection. This drift is the price of the connect of the connect on the seet of the connect of the connect of the connect of the conference of the connect of the

m about to days.

Will Ship IT Below.—Nevada Hevald, Oct, 31:
We learn that the Providence Mining Company, of
this place, has purchased the sulphurers dumps at
fairs place, has purchased the sulphurers dumps at
Callot & Leronix sulphurers works, Grass Valley,
and will ship the sulphurers to the Selby Smelting
as a flux in melting cres and other minerals. They are
sea thux in melting cres and other minerals. They are
yold and silver is obtained from them in this way that
almost what it is worth. This explains why it pays
cannot be secured by other processes without costing
to ship the refuse sulphurers that have already been
treated by the chlorination process. DELHI,—Worth San Juan Times, Oct. 88: R. McMunray, Esq. came down from the Delhi mine McMunray, Esq. came down from the Delhi mine works and will start up on November roth.

The set to work and will start up on November roth.

The suphurer works are progressing finely. The text works are progressing finely. The New Mill. STARTED.—Nevada Transcript, Nov. 1: The new 10-stamp mill on the Bluebell mine at top. It is furnished with all the modern gold-saving superatures and is put together in workmanlike manner. The new 20-stamp mill on the Washington mine at Ormonde will probably be running regularly in about to days.

WILL SHIP IT BELOW.—Nevada Heveld, Oct. 31: WILL SHIP IT BELOW.—Nevada Heveld, Oct. 31: Washoe District.

Tuolumne.

Tuolumne.

Kincand Flat Mine.—Sonots Democrat, Oct.

Sy: Supt. Kyland is pushing work vigcously in the thinsing Co. The Syland is pushing work vigcously in the thinsing Co. The Strong of the Kincaid Flat Mining Co. The feet, and the laying of a flume two by two feet for so feet, and the laying of a flume two by two feet for a distance of about 3000 feet has commenced. Work feet in the system on might and day, it amen being employed. The system now being pursued, which is a marked several years ago, promises well. A large amount of gold was taken out, and a large amount of gold was taken out, and a large amount of gold was taken out, and a large amount of gold was taken out, and a large amount pet re-

SIERRA CITY.—Mountain Messenger, Oct. 29;
During the past week some new developments have been made at the Secret Mount ledge. This is a new made at the Secret Mount ledge. This is a pit at a sit at sit at a sit at the city limits. A tunnel has been driven in on it and the ledge has reinformed by a gentleman who saw the ledge and tested the rock that it prospected wery well. A contract has been let to some parties to drift west on the ledge.

SIGITAL

Bhaeta.

Rich Quartz.—Shasta Democrat, Oct. 26: A milling test of some quartz from one of the prominent milling test of some quartz from one of the ton. An assay of the sublunter which were gaved went \$2019 to the ton. Still this ore is being shipped out of the ton. Still this ore is being shipped out of the county, because it is claimed by some that it some that it is claimed by some that it

PACIFIC MINING DISTRICT.—Sam Diegan, Oct.

San Diego.

BAD Diego.

PACIFIC MINING DISTRICT.—Sam Diegan, Oct.

29; The new mining discovery, known as the Pacific mining discovery, known as the Pacific mining district, as attracting attention among miners and capitalists. It is located in the eastern portion of San Diego county, and bids fait to be comes a mining camp of no small dimensions. Col. D. Bredeficks, and Helphingstine, Mr. Santes, C. D. Bredeficks, and Helphingstine, Mr. Santes, C. D. Bredeficks, and Helphingstine, Mr. Santes, C. D. Bredeficks, and Adys. These parties contemplists the escence of operations in a few days. These parties contemplists is about 135 miles from the city in the Chucks-Walls mountains. The from the city in the Chucks-Walls mountains. The time stands and an intension of the district is about 135 miles of the contemplate of the careful or parties are said to five said in it is the intention of the capitalist mentioned to put up a to-stamp milling of the one has been found near the district, and the contemplate is to Salon, a station on the miles are said to be sold in the content of the sold. The content is to Salon, a station on the content Pacific railroad about indway between Southern Pacific railroad about indway between the bremstein of the mines is only as miles, Mr. Hendsch into the mines is only as miles, Mr. Hendsch states that the workings so far show that the weins states that the workings so far show that the weins widen as they sink, a beneated by the sing Denselland Den

PINMER,

JOHNSVILLE NOTES,—Greenville Bulkstin, Oct,
28: James Phillips and W. E. Murray returned
28: James Phillips and W. E. Murray returned
28: James Phillips and W. E. Murray returned
29: James Persons The mining outdook is
20: James Bureka Co. employs the usual
20: John Nevil is quite busy rushing in the
30: John Nevil is quite busy rushing in the
30: John Nevil is quite busy rushing in the
30: John Nevil is quite busy rushing in the
30: John Nevil is quite busy rushing in the
30: John Levil is quite busy rushing in the
30: John Levil is devil is quite busy rushing in the
30: John Levil is devil is devil is the seed to supple of quartermille will be
30: John Levil is devil is devil in that vicinity next season. A way socel30: John Levil is devil is devil is a serie that it least a couple of quartermille will be
30: John Levil Is devil is devil is devil in that vicinity next season. A way socel30: John Levil Is devil is devil in the season of the single that the
30: John Levil Is devil is devil in the season of the single that the
31: John Levil Is devil is devil is the season of the single that the
32: John Levil Is devil is devil in the season of the season of the single that the
33: John Levil Is devil is devil in the season of the

Pinmes. width may be found in the Red Point—the name of the French company's location, which covers a distance of five miles on the dutide. This discovery is of the first importance to the mining interests of the first importance to the mining interests of the seatest portion of Placer county, as it shows the estern portion of Placer county, as it shows it we value. The success of the French company, which is now full seated estimated of the propagation of the same channel companies who have locations and there is every probability of other rich artikes being made on the great during the next year. The French company probability of other rich artikes being made on the lead during the next year. The French company probability of other rich artikes being made on the seven search and is now have a company of the series of the search of the s

porphyry.

BROWN AND 'LECRUITS.—Fifteen men knock down and boist zo tons of rich ore daily from the couthwest drift, which is down about 50 feet in the shaft.

OCCIDENTAL,—Are running a drift on the soo level, and have started a winze on the slope to connect with the lower tunnel.

NEVADA QUEEN. —Times-Review, Oct, 29: 100-foot level—The east drift has been advanced so feet, showing some good ore. soo-level—A winze has been started in the vein on the west ledge; looks well in sinking, being high-grade ore. The upraise well in sinking, being high-grade ore. The upraise in the east vein, just north of No. 1 winze, has been

Tubcatora District. Jeen. — Times-Review, ( GRANT,—Belmont Courter, Oct. 29: The work of development is progressing as usual in the Grant mine, with flattering results,

Northumberland District.

The ore extracted from this mine averages between \$65 and \$100 per ton.

The PAMLICO.—One of the owners of the Pamlico Thurght is a half pound of rock extracted, from this mine, pounded it up, washed it out, and obtained therefrom \$16 worth of gold. We are reliably inpate the company has extracted, drining the past week, among other rock, four asaks of ore that is worth, \$2000 as sack and bave a wall-defined ledge to work on, It is now a settled fact that this is worth, \$2000 as sack and bave a wall-defined ledge to work on, It is now a settled fact that this is worth \$2000 as a settled fact that this so work on.

The company now has five or six men employed, who are constantly extracting first-ledge or.

OLD HARTFORD.—Esmeralda Mesus, Oct. 39;
The Old Hartford mine, owned by Messrs. Kubpp,
Curtis and Prior, is a valuable piece of property.
About 30 fons of ore has been taken out since
their last shipment and is now on the dump, and
five mine is in good shape for taking out more.
The core extracted from this mine averages between
\$65\$ and \$100\$ per fon,

Hawthorne District.

ORE SHIPMENTS,—Eurleka Scathach, Oct. 28:

ORE SHIPMENTS,—Eurleka Scathach, Oct. 28:
During the past week ore shipments were made from the mines of the district to the kichmond works—Dunderberg mine, 13 tons; Silver Conner, 33 tons; Burcka Tunnel, 12 tons; Members, 20 tons; Members, 20 tons; Members, 20 tons; Morie Pine, 11 tons; Burcka Con.—California mine, 4 tons; Lake fores, 2 tons; Macryaville, 2 tons; Dunderberg, 17 tons; Burcka Con.—California mine, 4 tons; Lake Coddes & Bertrand, 12 tons; W. S. Dimmick, 21 tons; Geddes & Bertrand, 17 tons; Phoemix, 25 tons; Mine, 18 tons; Mine,

Belmont Dietr-let.

MILL Busy.—Belmont Couviey, Oct. 29: The Monitor-Belmont mill is kept busy crushing the ore from the Barcelona mine. The leaching works were started up on Tuesday last and are tunning splendidly.

Eureka District.

Eureka District.

Eureka Santinel, Oct. 28:

LADY WASHINGTON.—Are still drifting on the 725 level and skirting the vein. Portost.—The 350 and 450 levels are being strip-ped by lateral drifts from the Sharon shaft. Andes.—The west drift on the 240 level is mak-ing good progress in a favorable formation.

HULLION,—The usual progress is reported in the main east drift, and in the new drift from the main east drift. Urah.—Virginia Enterprise, Oct. 29: The drift of the type level has been extended to feet in a form-ion of clay and porphyty.

BULLION.—The usual progress is reported in the

OPHIR.—Are running a crosscut on the 1465 level connect with a winze already down from the 1300 tel. The crosscut is in a mixture of quartz and ruphyry.

DALTHORE,—The west drift on the 338 level is seing retimbered up to the face. The pump is low-sing retimbered up to the face. The pump is low-sing the water in the sheaf, which is drained and ALTA.—Are stoping ore on the 825 level, and ALTA.—Are stoping ore on the 825 level, and attendance hoisting to supply the mill when it is expected that the mill when it Insects. It is expected that the mill will start next

HAYWOOD,—Are stoping out large quantities of ore above the tunnel, and have resumed work in sinking the winze. Both the winze and the tunnel are in one. About 16 men are employed and so nons of ore are shipped daily.

NATURONER—The west drift on the 328 level is NATURONER—THE

Supper work in first geoscieft.

HALE AND VORCROSS.—On the 700 level have commenced putting in sills for square sets in the commenced putting in sills for square sets in the west crosscut near the south boundary on this level has been extended 30 feet, and is now 155 feet long, bas been extended 30 feet, and is now 155 feet long, workings of the mine holds out well. Work has workings of the mine holds out well. Work has been resumed in the south shaft and will be prosented at the shaft and will be prosented at the shaft and will be shaft and

SEGREGATED BELCHER.—The blower was finished and put in position last Tucsday, and work was resumed in the uposition last Tucsday, and work has since then been advanced as gleet in the same the quality of the ore has improved as they advanced. Been the property of the ore has improved as they advanced. Been the public particles and the same been dependently and quarts. The winze being sunk from the 1300 level is 4t feet down. The face is in porphyry and quarts. The winze belowing the winze be a feet in porphyry and quarts. The winze before a fine stand from the 1300 level is 4t feet down. The Bustything is working well in the mine. The feet fown. The feet is in city and quarts, feet. The feet and quarts flowed safe feet. The feet is in city and quarts. The feet for sure crosscut was extended to feet, they supply the feet in east contury rock. Have suppled work in this crosscut was the feet of the feet in east on the property of evel have supple work in this crosscut.

ALPHA.—The shaft is down about 55 feet below the sezs level. Sinking is being pushed as rapidly as the sezs level. Sinking is being pushed as rapidly as orgainly to explore the downward continuation of the core developed in the ass level west drift and to give as an outlet for the water on the fevel, as it is expected an outlet for the water on the fevel, as it is expected as outlet for the way clear to the Sutro tunnel after the case level is reached.

CHOLLAR,—On the S50 and 650 levels west drift is showing stringers of ore. Low-grade quartz is showing stringers of ore. Low-grade quartz is showing stringers of ore. Work the oppose the good quartz is showing in the bottom of the Sharon shaft, which is showing in the bottom of the Sharon shaft, which is showing in the S60. Work in the mine is being pushed attituding as possible.

sd or 3d of Movember. The work is progressing as fast as possible.

4881 'G "AON]

MINING AND SCIENTIFIC PRESS.

extended up 5 feet; total distance above the level, 23 feet. Vein is hard, with good ove in the top of faste. Stopes north and south of this upraise are better than any time heretolore. Mill started Mortadey, the sath instant, and is running nicely. Average pulp assays of the four days, \$219,88. The furnace is doing good work.

When the same is the fast of the four days is an area of the four days.

PARK MOTES,—Record, Oct. 29: A very large amount of development work has been done on the group of 1s claims between the Sampson and group of 1s claims between the Sampson and proper and sujoining the Parish & McLaughlin group on the soulthwest. The claims rate located on the course of the value as a set located on the course of the unquestionably fine properties of the under devel which cost one place by it, besides this there is an east and west drift there is an east and west drift there is a shaft down go feet, from which and chool tracedout into the ledge has been turn, and the owners found from this work that by a safe drift there is a shaft down go feet, from which had not been controlled to the control of the contr

OWNERS OF MINES.—Cor. Bedrock Democrat, OCC. 28: Lett us now sieke a look at Garler Over and a cere in what direction its inters of trade are goon and see in what direction its inters of trade are direction and see in what direction its inters of trade are and St. Paul, and probaby trom New York and direction the manipulation of the machine of the maintenant for more, Our camp is receiving goods and St. Paul, and probaby trom New York and direction the machine of the machine of the minima of the machine of the same time Portland resemble of the minima of the machine of the same time Portland received from the company, in most part through in the camp, building a so-stamp mill an interspect of the mine for assaying outfit, were furnished spaced or the machine of the mine for assaying outfit, were furnished spaced or while was sold to mines in the camp, building the same time Portland resemble on the machine spaced or specificating to the property. The Median property of mines on the machine as a prantice or est, of Bedrer City, and is, without any doubt, a valuable property. The was sold to Gabe mine for assaying on the property. The machine as an irrand-too Co. for \$45,000, and they are builded the same francisco explicating the mine is forested in the property. The machine as an irrand-too Co. for \$45,000, and they are builded to the way-Up mine, in our camp, is borned to a cast of Bedrer City, and is, without any doubt, a valuable property. The Way-Up mine, in our camp, is bonned to a mines and mining and mines and mining men from California, Meada, Mr. Reed, a San Francisco explication of the machine of the machine of the manipulation of the main of the manipulation of the main working shalf, 50 deet below the forth of the ground mines and mining and mines and appears any should take the Democratical and appears and special to be widening as a tradect of the ground out in large that same the same of the ground out in large that and the special of gold on the property and the property of the bottom of the mai

mines. The stoppage of work is generally regarded mines are there hard as work and a very amal space of both in the result of the part of the numbers where will the result with the result of the part of the numbers was a cutting down miners where we have on the part of the numbers was a cutting down miners was a constraint of the compage. What he result is a very amal space of both work in the cutting the number of the contract of the contract camps of the camps o

.ANATHOM

NEW MEXICO.

LEXINGTON.—Yesterday it was currently runnored LEXINGTON.—Yesterday it was close down, but on that the Lexington was about to close down, but on mill is operated chiefly upon custom ores, though some, of a very rich character, is obtained from their own mine. From all appearances this mill will continue to work as long as there is any ore in the camp.

and is of a native character, the miners thrown out of the disout is constanced in that quanty of ore, and is of a native character.

LAID OFF.—A number of the miners thrown out of employment by the suspension of some of the mines, are taking their departure for other mines and eamps. On the elected corners one can hear of fabrulous gold-fedicis in the frield North or the scorching beauth, as places of attraction for the cumpmen, in order to keep up steam and do other necessary work, both on top and in the mines, aome instances, have to climp a distance of 400 feet in order to keep up steam and do other necessary work, both on top and in the mine, work, both on top and in the mine, as the confined of the conf

SMELTER: —Advocate, Oct. 36. While other por mines, in the control of the country are trying to create borner be wide and rich knowled to the country are trying to create borner by other market because a control of the country are trying to create borner by the country are trying to create borner by other market, being country and the creater borner by other country. Without the creater because the creater being the creater borner by other country are trying of the Chapter kinds and the creater by the country around the proposed of the country around thisboro and Kingstone the country around thisboro and Kingstone to the country around thisboro and Kingstone to be country around thisboro and Kingstone to the country around thisboro and Kingstone to the country around thisboro and Kingstone to engore the country around thisboro and Kingstone to the country around thisboro and Kingstone to the country around thisboro and Kingstone around the country around the careful examine the engineer at the presence of the Week the Company or a grace of the Week part of the country around the confidence in the fairtiers of the country around the country around the confidence in the country around the confidence in the country around the count THE BANNOCK SHUT DOWN.—Inter-Idablo, Oct.

25. Reliable word comes from Best that the stamps of the Bannock Company's mill were hung up Saturdy for the Bannock Company's mill were hung up Saturdy not add the Bannock Company's mill were hung up Saturdy as an midnight. This has been looked for some little time, not because the mine was doing poorly, for it is nexcellent condition, but for several other reasons. There appears to be a united action among the mines of the country to reduce wages from \$5.50 to \$5.

There appears to be a united action among the mines where. There country to reduce wages from \$5.50 to \$5.

There appears to be a united action among the mines everybeen of the Thils and other prominent mines everybers of the finding upon it. Only 85 or 90 teet down in the Last Chance the fort for ledge of excellent profit is believed to the Last Chance the ene will seen worke will continue in the Horn Silver and three countinues. It has been worked at a disadvantage, broshing of the mill still still seed to be a suffice of men will still still still seed to be a suffice of men will still still still seed to be sufficed to the suffice and the suffice and the last of the GROOM CREEK.—Prescott Couvier, Oct. 28: John S Jones is constantly hiring more miners and putting them at work in Groom creek district unines.

Between 15 and 20 miners are at work in the Conbern Manner, Martines out rich gold rock. When M. Duggan was in Big Bug district, a few days ago, he was shown pieces of rock from a few days ago, he was shown pieces of rock from a Turkey recek mine that assayed \$\$5000 at ton. The

IDAHO SPRINGS—West, Oct. 28; Sinking has been going on in the Freeland for some time and a new some joint on the freeland for some times and a new series will be commenced shortly. Julius Hell had a say (300 bits all in one class; and a say of some series in gold to the ton. The Mott mill is now running ten to the ton. The Mott mill is now running ten freeland and Phenning lesse on the Fairmount. It. R. and the Champion-Donaldson mill is curshing custom of from the control of the Champion-Donaldson mill is curshing custom of from the control of the Champion-Donaldson mill is curshing custom of from the fair freeland and Phenning lesse on the Fairmount. It. R. and other miles and steadon while the control of the Champion-Donaldson mill be constructed from the lower level of the U. P. R. mine to the Fail River to the real to the fail River was a distance of 1500 feet. The place from the purp pub up. The cleasury will be constructed to the Maylower made; new abalt anne, wheel and of bolits, an compressor and reseasesty range, to of bolits, an compressor and reseasesty range, work has been of bolits, an compressor and reseasesty range, to only lating mill be turn in place at once. It is also reported that the Maylower mill sered a large concentrating-mill at the Orbital of Denbigh in the store of the say for say are being made the company will sered a large concentrating-mill at the Orbital of Orbital of the ton of \$500.000. The Library producing a pound of ore. It is such deals as this producing a pund of ore. It is such deals as this which give a black eye to our mining industry.

#### COLORADO.

Harris & Lloyd Co., have already in hand the plans and a specifications of the improvements contempared as plated on the first of the first agreements contempared to connect with a shall consist in rataing from the extreme end of the tunnel be administrated by will consist in rataing from the extreme end of the tunnel to connect with a shall consist in rataing from the capter of the work is completed sinking will continue till a sufficient depth is reached to tap will continue till a sufficient depth is reached to tap will continue till a sufficient depth is reached to tap the capter of the deet, known to the great copper feast of this camp. In the past indications are that if the chute of ore is followed down to the copper ore will be encountered. Almost all the silt indown to the early contact the chief contact with the couper lost will be encountered. Almost all the silt is contained in that duality of ore, it is not to the copper or will be all the silt in the chute of the lead, it is contained in that quality of ore, and the copper or will be all the silt in the copper or the suffice contact with the cooper-besting portion of the lead, it is contained in that quality of ore, and the copper or will be contact with the couper-besting portion of the lead, it is contained in that quality of ore, and the copper or will be suffice contact with the cupper or or a sant of some of the sead.

not be long before Clifton will smelt her own not be long before Clifton Will smelt her over clifton Clarion, Oct. 38: The regolations the seale of gold mine property in the regarding the sale of gold mine property in the complete of smelt siled. Three months ago a deed was camp, bave failed. Three months ago a deed was camp, bave failed. Three months ago a deed was camp, bave failed. Three months ago a deed was camp, bave failed. Three months ago a deed was put in escrow for 90 days. Yesterday terminated received advices asking for an extension of time. This the owners have follow of three other propositions which been given, and in the second place they were in made it advisable to take the course which they have Wirke Gold.—Campbell & Multi-'s Bonanas camp is in made it advisable to take the course which they have with of Campbell & Multi-'s Bonanas camp is in han the camp Monday with the face of the extension of time.

Wirke Gold.—Clifton Clarion, Oct. 28: Wm, with the camp Monday with the face of the care and were taking out wire gold. Campbell & Multi ships men at work there had struck it richer night that his men at work there had struck it richer week and sere now engaged in sacking ore at the camp preparatory to making a shipment.

the Henszey and one or two others will be set anility alones, work.

SILVER SMELTER.—Clifton Clavion, Oct, 38:

The proposition to have a silver smelter here has ownered themselves to merely demonstrate that it owners themselves to merely demonstrate that it is with the mineral to be some themselves of the set of the silver smelter should be already demonstrate that it is any to Childron three sames which have already almost a sliver to set of the silver of th

owaer of the property will shortly, ship several tons to the Prescott Sampling Works. Miners of Humburg district are shipping high-grade ove to Socorro and other seneters, what Prescott the for Socorro of the St. Louis-Yavapai. Co. is working up tailings of the St. Louis-Yavapai. Co. is working up tailing ing its ancient reputation. Miners of Bradabaw, Pine Grove, Turkey and Hassayampa districts are fine to see that mills will ere long start. Wasker district people have high hopes of them innees, september of the secont of the secont of the secont of the secont of the second of the s

#### ARIZONA.

width.

Nowell Bros., Property.—During our recent trip to the Island Mr. Geo. Nowell showed us over another location on this vein, owned by himself and brother, and others. A turnel shout soo feet and brother, and others. A turnel shout so feet under in length has tapped the vein about 75 feet under John D. Sageniller has a location between this and showe up well with present development.

The Douelas location, owned by Sam Howerth and Herb Douglas location, owned by Sam Howerth is the Douglas location, owned by Sam Howerth and Harte. Hete the vein shows an immense cropping, and from the very surface, the ore is thickly sprinkled with sulphurets. Several small directly sprinkled with sulphurets. Several small mineral services of the service

DUARTZ.—Alaska 1978 Press, Oct. 10: At the Duugias Island mine, and the past ammers, and the past ammers, and the condition works bas been added, and work on the cascond section of 120 stamps, by far the largest in the suggest of the castongs, by far the largest in the application works bas been added, will make a plant of set samps, by far the largest in the suggest of the castongs, by far the largest in the castongs would. The castongs of t

#### ALASKA.

PARADISE VALLEY.—Sider State. Nov. 1: The ore in west vein does not extend south of the winze ore in west vein does not extend south of the winze but a few feet, but holds its value and width north as showing about six feet of ore in the upraise and of showing about six feet of ore in the upraise and of better value. The output of concentrates is very satisfactory in value and quantity.

LOOKING WELL.—Belmont Courter, Oct. 29; Dimick & Luse's mine—the Ma Alta—continues to look well, and rich ore is hoisted to the surface daily and shipped to Eureka for reduction.

#### Tybo District.

LEASED.—Belmont Courrier, Oct. 39: J. E. Severance, the new lessee of the Barcelona mine, took charge of the property on Monday last. He has leased this mine for a period of four years.

Spanish Belt District.

COMMONWEALTH.—No. 1 crosscut, 300-foot level, has been advanced to feet, cutting seams of good one. The frame of the shalt-house is up, and being inclosed. Boiler is in place; will get to running inclosed, the work being pushed as fast as possible.

NAVAJO.—The workings at all points are looking

GRAND PRIZE.—The mill was statted on Mevada usen ore last Monday morning; is running nicely id doing good work.

nace is doing good work.

North Belle Isle.—North drift from No. 3

crosseut north, 300-1001 level, has made good progress, developing an increased width of high-grade over both drift from No. 2 crosseut north advanced y feet, showing good ore as usual, but no material improvement. Fair progress has been material improvement. Fair progress for level. The vein is showing a much graster width than was developed by the drifts, requiring in width than was developed by the drifts, requiring in some places so-foot stulls. The usual grade and quantity of ore has been sent to the mill the past week.

## GREGORY & CO.

San Francisco, Cal,

Cor. Fremont and Mission Sts.,

# MACHINERY

SOLE AGENTS FOR

SICKERING ENGINE COAERNORS OLLO SIFENT GAS ENGINES. PAYNES VERTICAL AND HORE. ATLAS ENGINE WORKS ENGINES ENGINES' BEOS, HOIZLING

TOKE.

TOKE. NATHAN AND DREYFUS OILERS.

H. W. JOHNS, ASEESTOS PACK-TYME YND BODIEK SYM MIFTS' ING CO', 2 KUBBER GOODS' MEM LOEK BELLING VAD BYCK-

GIANTS.

BLAKE'S IMPROVED STEAM PUMPS, SICKLOED, S LOMER DEIFTS' BEMENT & SON'S MACHINISTS nem Haven manuf'g co.'s ma-Chinists' tools. MACHINERY, WOODWORKING MACHINERY, WOODWORKING

SEVINARD MILLING MACHINES SHIMER MATCHER HEADS. EXHAUSTS. BLOWERS SERIN BYND SYM BLADES.

MASSEY'S STEAM HAMMERS, BOILCOWAY FIRE EXTINGUISH-ERS, BEADLEY CUSHIONED HAMMERS TURBINE WATER WHEELS.

IMPROVED FORM

DOORFE "ECONOMIC" STAMP MILL



We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamps a more than compensated for by the great weight (1200 Hbs. each) of our stamps, and the pidity (300 strokes each per minute) with which they run. There are 4 shoes in each germp, so that there are 4500 strokes of the shoes on the dies per minute. Less power is required than in any other mill to do the same amount of work.

The Mortar has sereens at both ends, giving ample discharge. There are no cams or tappeet to wear or be adjusted. The stamps adjust themselves as the shoes wear.

Goes with each Mill. We also have a suitable AN AUTOMATIC ORE FEEDER

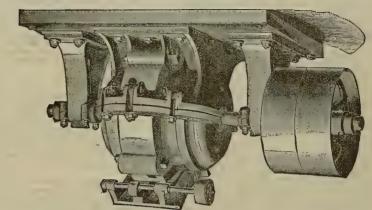
ROCK Breaker,

Several Mills are now in the mines doing excellent work. The ''Economic'' is not only a mill for small mines, but we believe it is destined to suverseder the old stamp in mills of the largest capacity.

34 and 36 FREMOUT STREET, TATUM & BOWEN,

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc. SAN FRANCISCO, CAL.

CENTRIFUGAL ROLLER MILL EEISBEE-LUCOP MILL,



most rapidly and economically. Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Cement Rock, and other

All andstances when ground leave the mill in a finished state—no regrinding being necessary. Automatic Feed. Wearing parts of Steel and Forged Iron.

#### BLAST AND SCREEN MILLIS.

EHISBEE-FROOD MIFF COMEA U. S. Mavy, Pacific Coast S. S. Co.

HOOKER & LAWRENCE, General Agents,

145 BROADWAY, NEW YORK.

ent nee on the PREVENTIVE AND REMOVER

DOWNIE EUCALYPTUS

BOILER

611 and 613 Front St., San Fran TUBBS & CO.

San Francisco Cordage Factory.

ne, etc., etc. Extra sizes and lengths made to order on short notice Eletablished 1856. Constantly on hand a full assortment of Manila Rope, Sar Kope, Tarred Manila Rope, Hay Rope, Whale ne, efc.

Machinery, Modele and Buildings

957 Market St., San Francisco. VIEWS OF

Mechanical Photographers, RUNNELS & STATELER,

o. It is of greater expectly and more easily worsted such The exterment of all. Hendy that all styles are infinitely chains made by him, he knows to be utterly failer, all on in reference to old style two, jointed machines, which is on the year to be outterly and the extense to old style two, jointed machines, which is on the year. The style of a reversal in our tayer. Miners and in the certainty of a reversal in our tayer. Miners and in this search of the work of the work of the work of the things of

MACHINE, HYDRAULIC IMPROVED This cut represents our

I DIRFERS FROM THE OLD STYLE IN HAVING ONLY ONE JOINT

JOSHUA HENDY MACHINE WORKS, 39 to 51 Fremont St., San Francisco, Cal.

HYDRAULIC

The above out illustrates the IMPROVED FORM OF HYDRAULIC GIANTS, which we man rive. All similar styles are intringements upon this form, and a judgment stands of record to that officet, unde decision of ludge Sawyer of the U. S. Chrouit Court in the matter of Hendy and Fisher vs. R. Hoskin et als.

**0**E

MILL SUPPLIES AND LUBRICATING OILS.

EROM S TO 100 H. P., ALWAYS IN STOCK

**ENCINES** Sug BOILERS

YACHT ENGINES.

SAN FRANCISCO. DOMNIE B. I. P. CO. Standard Oil Company, Gtc. Cagar Refinery, Etc.

SO4 MARKET ST., SAN FRA SEUD FOR CATALOGUES,

And 461 Howard St., San Francisco, where a Mill can be seen in operation and ores will be reduced at reasonable rates,

Market St. Cable Railway,

SCALE

## Metallurgy and Ores.

#### SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

LEAD PIPE, SHEET LEAD, SHOT ENGINES, BLUESTONE, .... MAKEUPA OF ....

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

## JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GIZLS, GEVERNARE VAD SANDERES' ELC.

114-118 Pine Street, - San Francisco, We would call the attention of Assayors, Obtemists, Mining Companies, Prospectors, etc., Mining Companies, Mining Companies, Mining Companies, Mining Companies, Prospectors, etc., including, also, a full stock of Chemicals.

noe Troy at different degrees on tunouse, not various not various and various of the season of the s

#### Nevada Metallurgical Works.

Near First and Market Streets, S. F.

Ores worked by any Process,

Ores Sampled. Assaying in all its Branches, Waters, etc. Analyses of Ores, Minerals, Waters, etc.

Working Tests (practical) Made. Plans and Specifications furnished for the

nost suitable Process for Working Ores,

Special attention paid to Examinations
Mines; Plans and Reports furnished,

G. A. LUCKHARDT & CO.,
(Formerly Hubn & Luckhardt, )

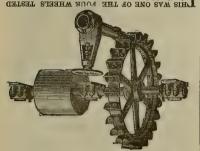
Mining Engineers and Metallurgists.

METALLURGICAL **MOBKS'** 

S18 Pine St. (Basement,, orfi Street,

seaying and Analysis of Ores, Minorals and Watere. ince Examined and Reported on. rectical instruction given. Treating Ores by im ved proceeses.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED A by the loght Company as fersas Valley, and for the loght Company as fersas Valley, send for situations and guaranteed estimates.

I. A. PELITON, NOVAGE CITY, ORI. ASENTE: PRINTE & LACY, SI and 2S Fromont Street and Francisco, Cal.

INVENTORS, TAKE NOTICE!

farket 3k. 3k. R. cor. Front (up stairs), San Francisco perimental machinery and all kinds of metal, tin sr and brass, L. PETERSON, MODEL MAKER,

> QUARTZ MILL, Huntington Centrifugal

MESEUD FOR GATALOGUE

JIGS and TROMMELS. CORNISH ROLLS,

**ENCINES AND BOILERS.** 

This Mill as a Crusher and Pul-verizer is without rival, verizer is presented in lead-

PUMPS,

MACHINERY,

CORNISH

ENGINEZ

SIAINOMITEET GRA RUDOLATAO ROT GREE

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

**FRASER** 

HOISTING **BUMPING** 



NEW YORK OFFICE:
Room 48, No. 3 Wall Street. GENERAL OFFICE AND WORKS: Fulton and Union Streets, Chicago, III.

UTAH OFFICK-SALT LAKE OITY, UTAH.

Springfield, Obio, These Wheels are designed for all purposes where limited quantities of water and high beads are utilized, and are guaranteed to give more power with less water than direct to shaffing by being placed on norisonists all spaining the mode at selection to shaffing by being, disposing with gearing.

Estimates furnished on application for wheels specially built and adapted in particular ace in so potatined of this form of construction, as well as the confinent of the property of the particular ace in so other or and are also as a second of the construction, as well as the ordinary vertical Turbines for Wooden Penstocks and in Iron Globe Cases, Iree of cost, a splitting to the manufacturers. Mining Turbine Water Wheel.

# COLD MINERS

JAMES

FRASER & CHALMERS, General Agents,

1AMES LEFFEL & CO.,

MEXICO OFFICE; Mexico, Oblhushus, Mexico.

DENVER, ОРРІОВ: Мо. 248 Еіghteenth Street, Denver, Colorado.

or 110 Liberty St., Mew York.

LEFFELS

TRAMWAYS

MIKE ROPE

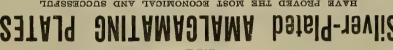
HALLIDIE'S

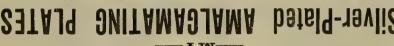
Quartz, Gravel and Placer Mines!

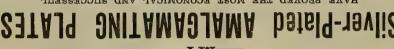
**SMALGAMATING** Silver-Plated

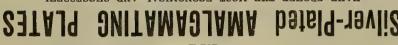
Fifteen Medals Awarded.

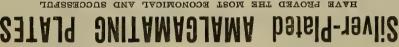
HYAE LEOAED THE MOST ECONOMICAL AND SUCCESSFUL



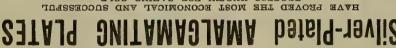


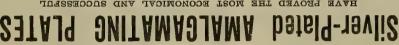


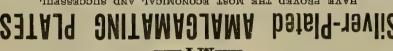


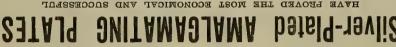


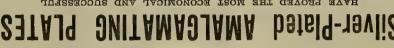


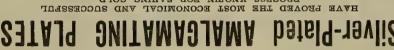


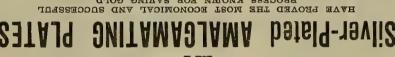


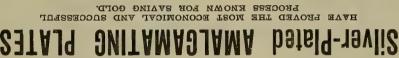






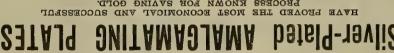


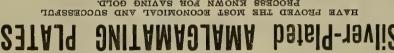


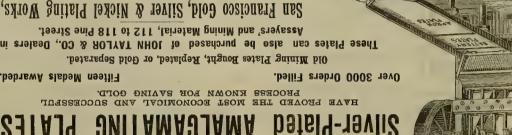












# THOMAS PRICE'S ASSAY OFFICE

663 and 666 Mission ST., San Francisco, Cal. E. G. Denniston, Proprietor.

CHEMICAL LABORATORY,

RULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES.



American Exchange Hotel,

St., S

San Francisco m Bank of Cal.

OHAS. & WM. MONTGOMERY, Prop're.

#### MINING SHAREHOLDERS' DIRECTORY.

Compiled rvery Thursdry prom advertisements in Mining and Scientific Press and other S. F. Journels.

	gf 4498	75		48 smosm		Berier	[ M., sinvolifsD.,	oo M rangol cosionard nas
	di glu C	32		te Vromo:	JaoM 828	desM	L BRONITA	Silver King M Co
	AI dash	02		gomery St.	328 Mont	oizrıoM	L., Galifornia, J.	Russel Reduction & M Co
	di raA	10	***************************************	tomery St.	taoM 828	Letts Oliver.	Wsbevall	Paradise Valley M Co
	EVOV	42		. 38 aniT 8	8	nosiliw H	H. BbaysM.	Ешека Соп М Со
	el vaM.	10.		48 VIOLO	stuoM SSd		T California.	Derbec Blue Gravel M Co
	7 450	90		48 vienov	400 M 608	влэтяН W	A shavaW	ob M aV & signofilsO goD
	PAYABLE	OUNT,	MA .	OR IM S' H	OREI	ECRETARY.	LOCATION, S.	MAME OF COMPANY.
			CONTHS.	HEET W	T MIHTI	DENDS-M	LEST DIVI	A.1
	LE MON	crad	ds	if ornia St.	BO 608	M Bumpgton	LabaveM	South Comstack Con S M Co.
	I YOU		eq8			K Durbrow	A signofilsO	Occidental Con M Co
	MOV I	lana	и <b></b>	ifornia St.	(B) 608	С Наттеу	O giarolilsO	Bodie Tunnel M Co
	DATE.	BALLING	L ME	OR IN S' I	ORE	EORETARY.	LOCATION, B	MAME OF COMPAUX.
				TD.	O BE HI	ELINGS 1	IM	
	gomery St	moM tee	namiesa	M A. GL VO	M dx 45C	20 Sept 200s	Arizonia I	Weldon M co
	Conteny St	anom 30f	(Snsv	M C. OS AC	N'T AON	1.,73 4q98 co	4 simornis,	Virginia Creek Hyd M CoC
	48 signoit	180 484	Grry	8 A OI 59	CT ''' 9T AO	N 6 5 0 42	Salifornia,, E.,	True Con M Co
	Bine Bt.	31	Spinney	G 15. G E	OA II D	10Oct 7L	Mevada., 22	Scorpion S M Co
	Somery St	JACO M 866	Brekman	M A SI VO	N72 350	25. Sept 20	OI snozirA.	Peerless M Co
ı	esdorff St	biad SII	Holden	48,.8I vo	M 18 450	Na dqaBdl		Worth Bonanza M Co
l	48 916 CO	эп M 808	Humt		ec IDe	I,.er 35001	IS sin rollik	Mew Coso M Co
ı	Somery Bt	druM 828	oizi10		ML VOY	172 tq98cz	88aintornia.	
ŀ	18 Addition	JuoM 888.,,,	snoisa93 \	OV EL. G W		50. Sept 15	ts sinrolila.	Mono M Co
ŀ	18 emosus	troM Sec	etxel			10 dept 150	alifornia. 3	Guadelupe M Co Live Oak Drift Gravel M Co.C
	ISH Block	8 519	guiuno			12 45O60		
	19 Alamos	anoM 226	Gleason	W.T. UZ be		161 35G01	". TZ Biurolila!	
	18 Alemon	July 14 020	e Landresso.,			[IN 450,08-1		
	Somery Bt	3440M & 23	Lake			81 VIII J 80		Cataract & Wide West G M C
	Pine St	SE	ruch	STAT'S AS	N 11 400	Ja agaga et	esinrolifat	
1	38 auid 72	8		OA 71 C	70x 350	50. Sept 15.	Kerada 33	
1	3B onig 08	£	dreat	M CT 8 DE	CIIZ 401	10, Oct 18, 1	., 3 sbayaM	
Ī		LIVOR OR	SECRETARY,				OUATION, NO. A	

#### San Francisco Metal Market.

L	g	0	09	g	۰	•	I	۰	٠	•	ĸ	۰	۰	•	×	×	•	۰	۰	Ŧ	۰	۰		•	T	F	٠	•		۰	***	۰	٠	**	ľ	н	*	I	B	Ι	
g	9	0	00	g	۰	•	•	•	۰	•	•	8	•		•	۰	•	8	I	۰	9	۰	•	r	۰	۰	•	*	۰	•	×	۰	***	2	Ť,	ď	=	· a	CA	a	ŋ
8		0	09	28	3	T.	P	۰	٠		4	۰	4.4	I	٠	۰	٠	917	×	٠	٩	•	I		۰	٠	4	r	*	*	ì		0	N	ľ	48	4	ļO	q	B	
٠		(0)	00	7.7	7	•	K	۰	٠	•	1	•	×	•	•	8	8	2	I	P	۰	۰	•	X	۰	۰	۰	٠6	1	n	1	W	€	91	U)	Br	Ţ.	84	ľ	Э	
-	-	(g	20	25	7	۰	4	2	٠	•		B	8	•	I	E	٠			I		٠	۰	•		۰	۰	• •	τ	ic	1	T,	8	ā	ī	u	0,	89	II(	Ć	
0	35	(0)	-																																						
0	87	(0)	_		8	41	X	8	P	u	*	В	•	×	×	В	9		×	r	В	a	×	4		ч	۰	*	8	•	ď	0	17	М	u	O:	v	П	D,	Ε	
ġ	18	(Q)			м	4	4	н	и	4	¥	ч	м	8	ч	ч	ч	۰	۲	ч		*	ч	u	9	п	Ł	е	10	U	*:	в	ø	u	잌	H	ᆴ	-1	1€	25	3
8		(0)	6E		В	0	3	X		٠	2	8	9	x	•	9		9	Ŧ	•	9	9	4	Т	в	•	9	•	8	38	98	u	S	Ŧ	X	250	Ŧ	97	II,	T	
ī		0	154		۰	۰	1	P	۰	9	•	٠	٠	3	X	•	۰	**	×	٩	۰	•	Ι		8	9	•	×	٠	•	Ŧ	0			۰	• •	4	na	ď	Ι	
3		8	6I		٠	-	E	Ø	۰	• •	۰	۰		X	П	8	۰	•		۰	9		I	1	٠	٠	В	•		В	**	•	B	21	U	u	31	69	ų	8	
g		(U)	6I		В	4	I	•	۰	**	•	٠	•	•		٠	8	•		•	۰	8		T	•	0	а	•	۰	۰	•	М	•	•		•	۰	11	05	Ξ	
		~																																	H	-¥	IZ	Ы	J	0	0
		0	g		٠	۰	•	ī	۰	9	1	F	۰	•		٩	۰	*	X	*	•	8		I	•	٠	٠	•	٠	٠	• •	٠	E	B	30	ß	B	ш	I	₹	
		0	£4		۰		×	ĸ	۰	•	Ŧ	۳	۰	•	Ŧ	E	۰	•	•	Т	•	۰	0	π	IJ	p.	19	I	IJ	9	В	I	15	B	ŝ	=	X	V	B	0	g
-	á	(0	96		В	•	•	•	I	•	9	•		•	В	9	•	×		9	۰	E	lΈ	30	8	1	Ų:	oτ	16	3.3	C	Ξ	-	A	N	0	N	Π	J.	N	v

-	ģ	0)	90	T	•	۸	**		• •	8	2 *	۰	•	100	*	ч	•••	•	•	**	۰	• •	•	•	•					AB.		
nn.	627	3	00	88		40			4	33	Ю	•		8	8	8	• •	*3	S	BŢ.	I	PΕ	2 /	\$2	τ-	-ਬ	3.	Δ3	IF	E	DI.	αĈ
ez	1 1	0)	Q/	a	١,				1	٠	1	٠	•	•	Œ		٠.	П			۰		**	• ;						FL		
30	g		00	0		a.	ĸ.	.,		419				٠	٠.	٠		ė,		٠.	٠	• •		83	Tr.	or	١.					ŭ
ΠĦ	3 6	"	VU	눠																												
91	6	9)	OI			۸	***	м	•	ч	ч	ч	ч	ч	м						۰	ш	-							ગુર્હ		
q	ĝ	0.4	ъ		В	80		*		•	12	ч	×	۰	• •	ы	• •	н			ч	•	3.5	• •	•••	• •	.Σ	19	uι	qэ	BI	Ų.
ē	ä	0)	Ť.				4			٠	•	٥	1	۰	• •	•	• •	٠	•	**	۰	٠.	* *	•	* *	• •	٠.	• •		M		
-	2		ž.		и		ш					4		7			-		A	r en			TO	· t	n					g		
-	Ų	774	6												B	0	Σį	b .	Δ.	V.E	ц	FF	70		Ņι	IO	ur	RH	1	ત્રુપ	ել։	t.
98	Q	0)	91			83			20	•		•	8	•		•	• •	•		•	•	**	٠.,	11	<b>'</b> प	SI	Z	щ	₹-	-1	<u>ele</u>	L
-	ĥ	ลิ	07	-				4		20		• 1			œ	•			10	111	10	20				-				ITE		
	9	2		8																	и					. 0						
- *	Q	9)	00	$Z_{\bullet}$	m	20			-	м	*	и		м	4	м		м	ш	-	м	•	ш	***	м	12	B	પા દ	₽.	٦Ę٤	щ	а.
_	á	9	08	Ť	45	ďε	30	1 8	£	10	G	Z.	σ			2	348	q'	ů.	ΛŒ	T	TO	9/	กา	12	uξ	LO	08	q	430	ञ्च	g
	7	~	00	ы	ш	я	46		no.	H	47	н	۲.	и		4		ы	Ÿ	4	м	8	10	ч.	æ				be.	10	***	Č.
		9	8																											400	ગ્ય	20
94	9 0	0	ng	Q		•	**	•	٠.	٠	•	•	•		•	• •	•	۰	• •			•		×	***		м	-	•	* :	re	I
OG	9 0	6	00	ĉ					٠.	11	•	٠		۰	• •	۰	• •		п	• •	۰	• •	* *			**		St	X-	-	IV	ar
*	- 3	5		E.			e.		•	7		7		м		м		м.	и		м					* 1				110		
_	Ų	עש	09	68																						L	U,	N.			ગ્ય	8
-	ä	(0	ac	25	7.0		1 4			٠			•		4 3	10		1	-					ลา	RU	I AA	. 6	u	BL	6	270	3
		Κ.	0.4	0	au	ш		w				н												ĸ.	44	44	a.		jec,	. 82		×

OVE FRIENDS CAN DESCRIPTION OUR PRIENDS OF SHEET BY GO WHOCH IN THE SECTION OF SHEET BY SHEET Our Agents.

JARRO C. HOAG—California,

JARRO C. HOAG—California,

GRO, McDonellare Airona,

GRO, McDonellare Co.

E. G. HUSTON—FREED CO.

E. P. SHITH—Weshington Ter.

W. J. FREEBART—Leason and Plumas

W. J. FREEBART—Leason and Plumas

A. J. JEWETT—Thists CO.

#### SPECIAL MEETING.

#### ing Company. South Comstock Consolidated Silver Min-

A special meeting of the Stockholders of the Soulh Aspecial meeting of the Stockholders of the Soulh of the Aspecy will be at the office of the Company, Wo. 309 California. Street, room 4, San Prane see, delitornia, on Monday, the 21st day of Worember, 1887, at the other two of Worember, 1887, at the other two the consed or taking into construction of the president. Transity for the other of the president. Transity Mov. 18, 1887, at Transley books will be closed on Fristay, Mov. 18, 1887, at Transley order of the president.

Minim Minimus Hydraulic Minimus
SZO WARKET. ST.S.F.
DEMEKSCI

## BY AUG. J. BOWIE, JR.

urdy-grudys, rockers, undercurrent nethods of blasting; tunnels and lump; duty of miners' inch, etc. 4 or gold miners and users of water. for asle by Dewar & Co., Publishers for asle by This new and importent book is on the vector of Ditches, Pamer, Paper 1. Heavy Grades, methods of minds decre, blatory and development of minds decreasing, mechanical appliances, as the contraction of the contract of the c

717	AU .00	MOIE	M EET	ASTS	WENLO	.0VS 500	
46	22 00	TRUE	DITZA	TIC EL	MYCNE	NON POR	
*019	Stab, 18	a .ebm	snour p	Bas cure	* case.		
Jan	Ketair	Periect	"ssn.i	Tolito Tto wear	EI FE	3	1000
SS	URT 3	ITSA13	NETIC I	DAM			ı
par	BIGDIE	) eur	or Pir	A SUPPLY OF	3	A STATE OF THE PARTY OF THE PAR	
V V	TT (	and Per	Suickly .		ा द्वाराक्षण व	TESTO ON	00.00
M	L.D.	ma	Du	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	il (Sangai	0.00	(0

Seed for Charles

AT THE LABEL ON YOUR PAPER,
demand paymentior the time it is sent. LOOK CARRULL
sponsible party requested to stop it, we shall positively
subscriber to notify us to discontinue it, or some irre-
wish it, but it it is continued, through the failure of the
not knowingly send the paper to any one who does not
posted card (costing one cent only) will suffice. We will
for it, let him not fail to write us direct to stop it.
does not want it, or beyond the time he intends to pay

#### S. F. Stock Exchange. Table of Lowest and Highest Sales in

67.4 UP,	4,30	05.4 64.	98.±	08.₽ 03.	4.25 35,	04°	00'3	Sierra Mevada
£2.	02.9		87	₹8	22	8.25	84	Savage Seg. Belcher
OT.		OT'		01.		ĠΙ.		Peer Sheridan
02.8 1,40	GI,I	92°T	60.1 60.1	OL'I	60.1 00.0	2.00 6.00 1.10 65	0)'T	Perriess
90.6 92.9	08.7 04.2 87.8	01.2	90. I 92. g 92. I	00.2 80 80	1.80	8.50 00.8	03.1 09.3	Орћіг
25.25	00,2	08.	.24.	00.1		GP.	52.7	Nev. Queen North G. & C Occidental
0F F	4.25	62. č		32,3	94.19	99.₽	04.4	Wiag Ta
OI.	••••	17.20	ioi.	10g 10g	02.1		60,6	Navajo
		4.25	***		****			Mexican
36,1 6,00	08 9	2.25 4.65	96 I	2.10	1.15 4,30	1.30	1.20	
06.	77	06.2	ġέ.¨	96°	ët.	99°	94.	Lady Wash
09.I	03.1	09.I	UG.	39°I	64.I	06.	32, I	Justice
				0 <del>1</del>		S₽*	OF.	Holmes Independence
0£.£	01.1	JG.P	01.4	4.35 €.35	90 F	4.30	38,85	Gould & Curry
1.30 1.55	or .	96'₹	01.4 08.1 08.1	1 32 1 27	1.35 1.35	01.1	4.20	Exchequer
88.T		00°Ž	37.9	00.7	05.8	30 4	20.11	Dudley.
****					****			Gentral
96. 07.I	67.7	125	fot	1,00	06°	68 88	08.8 08.	Crown Point Orocker
02.	09"	06.X	g₽"	36. 38.	99	06. Z 62.	G₽°	Caledoma
09 % 01 89	6.25	0.00 0.00 0.50	\$0 8g	00.8	₹g.	8.50 06.8	08.1 92.8 08.1	Confidence Confidence Con Imperial
67.2	03.2	08.2	03.2	Sp. 2	35,25	2.50	36.2	Uhallenge
1.05	₹9I 06	1.05	91	gi i	\$9T	06. 8I	08, 91	Bulwer.
3,50				CITE	€2.₽	07. 68.1 61.4	02'8	Benton Tunnel
ባይ"	01.1 67.	1.25 1.00 2.40 4.25	OL, I	1.30 1.00 1.30	UTIT	GT.L	65. 39.1	Raltimore
2,50 1,25	68 00.2	2.20	06.1 08.8	\$4 8.00	CI'T	96°T	07.1	Brolhon
10 <del>1</del>	28	FET	62.6	TI		62,6	\$c	Belcher
1.50		50.8 30.8 34.1 35.	08 T	ng'T	CC'T	25. I	02.2 02.1	Andes
67.8 07.8	07.1	29	00 5	00.8	82.8	86 06.2	00.8	sedq[A
	MOV	.72 .		20.	Oct.	TET "		Сомтаму.
LING	END	SEK		ONI	KAE ME	PING	END END	TO EMAN

#### Sales at San Francisco Stock Exchange.

	•								
ket5.70	пож две	ΘX	003	\$2.£		10	M 38 SLa	H	260I
2.2	d.8	1U	500	\$2.4.25		Curry	25 blue	Go	400
7.8	non Con	αn .	320	E.I		9Z .	and Pr	(1)	0003
	asic	Tr	1250	06.1		Té.	noəqə	x.9	05.1
004	fli <b>H</b> 197.	IIS I	120	3,00		Laire	tal jas	OD	97.5
007	. noign	Sec	200	OT		95	ledoni nfiden	OD	01
8.4 <b>.sb</b> a	reM sm:	sig.	222	09			inohal.	ri)	000
3	9348V	BS.	078	ខែ::::		duic	d uwo	QD	567
3.1	asəl19	e4	520	41		. Gal.	A RV m	υŅ	0921
ogg	19	94	1300	ŧg.			Tello	QD	00 r
001a	Sherida	.g	1000	20.2			of) affe	oH.	02
9	1801	$\mathbf{b}^{o}$	08F	967			noilli	ag.	09
9.2	. namie	40	08₽	2 10			noilli	шЯ	007
8	माग	aO.	270	ZI.I.			lcher.	e H	150
Z.\$uc	y, Quee	Ne	100	6'			Tedal	ષ્સ	1930
16 T	Belle Is	'N	09	\$9		Tarf	क प्रभाव	8	6103
16 T	•••••ощо	Wo	09	08.I.			ndes	IA	948
D8.₽	zican.	9M	100	04.1.			&J	TA	300
96	saw vi	RaI	009	35.8.			2 11 17 17 17	IV	บบน
Jg I	etice	art.	J00	788	8	TOM	X A des	TIL	T

#### Compilmentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms o subgreed to examine its ontents, terms o suription, and give it their own patronage, and so recipions, and give it the their of circulating the forward, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

#### Don't Fall to Write.

#### The Chemehuevis Mountains.

The scarcity or water has been the great obsists of in prospecing and developing. A number of prospectors perished with thirts and in early days several were killed by hostile Indians. During the last four years we have noted the most important factor in bringing this section to notice was the discovery of a fine body of water adjacent to a mineral deposit, and, so far as known, the only available water within 60 miles. and silver in these rugged mountains in Arixons. The scarcity of water has been the great obstathere were rich and extensive deposits of gold For a number of years it has been known the

where, We are informed that the Chemehuevis Mine and Milling Co. have secured by patent a body of water, but of hard selient to this body of water, purchased the water right, and are erecting a mill to crush the one now on the dumpe. A leave enterprising men having taith in this section leave shown great tenacity in developing the olaries.

calmas.

The property belonging to the Chemehuevis
The property consists of two gold and two
Mill and Mining Co. consists of two gold and two
the Weedles, 14 miles from the Atlantic & Fsoffic railroad, and the ore is free-milling, so that
the owners expect good results as soon as all
strangements are completed.

#### Mining Share Market.

ing share market this week. Trices still continue low, nothings of moment has occurred in these still continue low, notwithstanding good reports from the mines.

On. California and Virginia passed its dividend this month, though the October still and the dividend this month, though the October Denderd of Denderd and Virginia Denderd to Deservate a dividend. The Standard Con. has declared a dividend. The Standard Con mines this month amounted to dividend the California pattery.

Selve says: The starting up of the 40 additional stands in October. The starting up of the 40 additional stands from the California battery mill stands with the California battery mill stands with the California battery mill stands with the California bettery mills the complined daily product from the Constock mines will be a complied daily product from the California and Con. Virginia slone averaged 1000 tons and Con. Virginia slone averaged 100 tons and Con. The Savage is sufficient flow of water in the Carson river to operate the flull complement of 38 stamps in a present is nearly 850 tons. The Savage is a present is nearly 850 tons. The Savage is now a sufficient flow of water in the Carson river to operate and the older averaged 1000 tons of the control will average and the control of the stamps in the daily one product ton wheth will be daily one of the stamps in the control of the stamps in the sufficient flow of the standard of the st Nothing of moment has occurred in the min-ing share market this week. Prices still con-

#### Bullion Shipments.

We quote shipments since our last, and shall

be pleased to receive further reports:

be pleased to receive further reports:

Moulhon, Oct. Z6, S19,712; Baradise Valley,
Z5, \$4449, Laxingron, Z2, \$14,972; Bluebird,
Z2, \$178,849; Loraingron, Z2, \$14,972; Bluebird,
Z2, \$178,849; Loraingron, Z2, \$14,448; Pamlico, Z,
\$440,237; total so far for October suphments,
\$141,259; Bluebird, Z7, \$14,448; Pamlico, Z,
\$122,640; Bluebird, Z7, \$14,448; Pamlico, Z9,
\$2500; from Butte, M. T., week ending Oct. Z9,
\$2500; Germania, Z9, \$1804; Hanauer, Z7,
\$2575; Germania, Z9, \$1804; Hanauer, Z7,
\$2575; Germania, Z9, \$1804; Hanauer, Z8,
\$2576; Germania, Z9, \$1804; Hanauer, Z8,
\$2570; Bermania, Z9, \$1804; Hanauer, Z8,
\$2570; Bermania, Z9, \$1804; Hanauer, Z8,
\$2570; Bermania, Z9, \$1804; Hortner, Z9,
\$2570; Bermania, Z9, \$1804; Hanauer, Z8,
\$2570; Bermania, Z9, \$200; Hanauer, Z8,
\$2570; Bermania, Z9, \$200; Hanauer, Z8,
\$2570; Bermania, Z9, \$200; Z9,

#### New Incorporations.

ter C. Can M. Smith. GLENCOR CON. M. Co., Nov. 2. Location, Calaveras Co. Capital stock, \$200,000. Directors, John Satterfeild, John Piccaira, Walter C. Childs, John H. Gillespie and William M. Santh. The following companies have been incorporated, and papers filed in the office of the Superior Court, Department 10, San Francisco:

M. Cambu.

M. Cambu.

M. Captes S. M. Co., Nov. S. Location, Nevada.

Captes stock, \$10,000,000. Directors, Irwin
C. Stump, Millen Griffith, H. P. Wood, E. W.

HANNA PLANTATION Co., Nov. S. Object,
to oultivate a sugar plantation in the Hawaiian
islands. Capital stock, \$300,000. Directors,
islands. Capital stock, \$300,000. Directors,
S. W. Rosenstock and E. Benjamin.

#### '\$ '\$ '\$ '\$ '\$

an importent matter; it's necessary in our busi-ness. We are very modest and don't like to speak about it, Siribers have Leemingly forgotten. To us it it is There is a little matter some of our sab-

#### Inventors, List of U. S. Patents for Pacific Coast

From the official report of U. S. Patents in Dawst & Co.'s Patent Office Library, 220 Market St., S. F.

FOR THE WEEK ENDING OCTOBER 25, 1887

T., Call.
372, t45.—ALMOND SEPARATOR—J. L. Heald,
372, t47.—STACKER.—M. A. Heinlen, Lemoore,
Cal. ret, Cal.
37s. t4r.—Pile Protector—R. W. Gorill, Oak.
37s. t2s.—Wick Adjuster—G. Hardessile, S.
F., Cal. 371,932,—HAY-PRESS—C. H. H. French, Hollis-fer, Cal. 372,112.—HOKSESHOE—J. E. Bingham, Walla Walla, Wadle, Wash, Ter.
Walla, Wash, Ter.
Brooks, S. F., Cal.
372,121.—Metallic Lath — M. J. Donovan, 2.F., Cal.

372,148.--WINDMILL--G. Henderson, Portland,

O'regon.

372.299 — LOOM SHUTTLE — C. G. Root, San Quentin, Cal.

Red Bluff, Cal.

372.179.—"WASHING MACHINE— L. N. Senter, Red Bluff, Cal.

372.179.—"Low—A. J. Smith, Wheatland, Or.

372.051.—"SUSPENDERS—S, Truax, Truax Landing, Wash. Tending, Wash. Tending, Wash. Tending, Wash. Ten

Nove.—Copies of U. S. and. Foreign Petents tunbled by Waver of O., in the polyshed of Pareign before the presence of the prese

#### Notices of Recent Patents.

worthy of special mention: Among the patents recently obtained through Dewey & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are

Worthy of special mention:

PLUS-PROTECTOR.—R. W. Gorrill, Oakland.

No. 372,141. Dated Oct. 25, 1887. This improved device for protecting piles and obter protecting piles and obter finders from the ravages of marine insects consists of an inclosing covering of mire oloth, is larged as a short distance from the body of the polity of the plants of an inclosing covering or hydraulic cepting and a covering or filling of hydraulic cepting to the plants of the plan

Acoustic the state of salt waker.

Separative delivers of salt waker.

John L. Heald, Crockert, Contra Gosta Co.

Mo. 372,146. Dated Oct. 25, 1887. Almonds and similar nuts are separated from the outside hulls or overings by various mechines, but these machines leave the almonds and shells all mixed together, and the operation of separating mixed together, and the operation of separating them has hitherto been very tedious, as it has necessarily to be done by hand. Mr. Heald's device is intended for separating the loose hulls from almonds or similar nuts which are mixed together after the hulls have been stripped from almonds or similar nuts which are mixed from them uts. It consists of a table having which is given a shaking motion so that the operated opening or perforations, which is given a shaking motion so that the operate of the supplemental of the passage the hulls are discharged through the opening, while the nuts will pass off separate from them.

It was a strained to the supplemental of the strain opening, while the nuts will pass off separate from them.

Mental Maratic Latter.—Michael J. Donovan, S. 1837. It the passage of the passage of the state of the the state of the

Meynem.

Meynem.

F. No. 372,131. Dated Oct. 25, 1857. In the manufacture of metallic laths, it is customary and annufacture of metallic laths, it is customary for matulacture of metallic laths, it is customary for make them of sheet metal in lengths suried to the sheets from which they are to be made, the metal being bant or corrugated so as made, the metal being bant or corrugations are usually made by machinery, and all their the only way to attend their length; so of the same aixe throughout their length, so that the only way to attend the laths is to usil them up, each section abutting its end against the and, and wider at the other, so that the smaller on end than at the other, so that the smaller end of one sections tapering and wider at one on the smaller and of the adjacent sections to lath will enter the under end of the adjacent one and thus make and the other, so that the smaller end of the adjacent one said thus make a more section or lath will enter the under end of the adjacent one and thus make a more section.

#### EWer-Melennan.

Yesterday morning Mrs. Donald McLennan Yesterday morning Mrs. Donald McLennan was married at the residence of her son, Mr. McMruke McLennan, 1516 Clay street, to Mr. Warren B. Ewer, the well-known editor of the Muruce Aup Scuewritt Press and the Pactic Arval Press. Ace., Horatic Stebbins was the office and no officiating clergyman.

The wedding was strictly private and no party left at once for the casent that the bridal party left at once for the southern portion of earth were issued, for the casent fast the bridal party left at once for the scatch private and no earthy left at once for the scatch private and party left at once for the scatch party of all that region began.

The bride is the widow of the late Donald prestry of all that region began.

McLennae, who essen falle, the Mission Woolen-industries of the State, the Mission Woolen-facture in the marked a new and more prosperiates in the manufacturing interests of the costs. Through his long laboritous years are ouse era in the marked a new and more prosperious with her lumband, watchful of his every was often to be seen riding through the business increase. The groom is a pioneer who came across the plains in 1849,—Davily Oall, Oct. 30th, increase across the plains in 1849,—Davily Oall, Oct. 30th, across the plains in 1849,—Davily Oall, Oct. 30th.

H. M. RAYNOR,

NEM LOBK' No. 25 Bond St.

.H.H.H

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

J. POOLEY.

lerms, Board and Room, \$1.00 per Day

Laundry Free for the use of Families
HOT AND GOLD BATHS THEE. is Five-pool Bylek Building is centrally located, in feasiblest part of the city, only a half block from grand and Paiser Hotela, and olose to all Steamboat Ralineat Offices.

14 Third Street, San Francisco, Cal

MINCHEZLEB HONZE

Kanufacturing Purposes.



#### ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Tramests, Elevators, Signals and all kinds of Electrical Systems for lighting and smission of power, either direct or with atorage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works, rand Outdoe Illumination of every kind. Gas, Oil and Candles superseded by the

EDISON INCANDESCENT LIGHT,

The only complete and satisfactory incandescent system. Lights require no attention and are under complete con-trol. Over 500 000 lights in use in the United Skines SEDE-EXECULATING ARC LIGHTS turn night hird day and afford a means of working the whole Sk hours; invaluable to contractors and others to whom time is an object. Estimates and designs on application.

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

#### No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

#### **NILHO CILACEHINE**

("DYNAMITE" or "GIANT")

Vigorit "LOW" Powder, Blasting Powders.

FOR REMOVING STUMPS AND THEES,
WORKS: California City, Marin Co., Cal.

ED. G. LUKENS, Manager.

TMHTAS

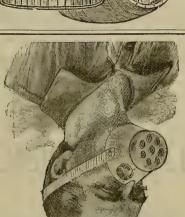
#### LIFE-SAVING RESPIRATOR

Entirely Prevents Lead Poisoning

and Salivation.

The most period spplance for people engaged in famoust period periods and structure. Dry Crushing, Guano Works, Quickesliver Mines, bead Corredings, Thresshule and Stocke-driving, and all olber cocupations in the whore shore is duck, possessed and similar where shore is duck, prosenting Macchines, and similar can be entired and similar manual manual

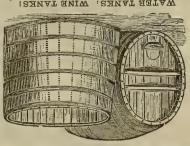
Scind for Descriptive Circulars containing 1esti-and line of well-known parties who are at present using





FOR SALE.

I New 12-inoh, 35 H. P. Engine, Very Chear. Apply 130 Sansome St., room 12, 2 Triumph Concentrators.



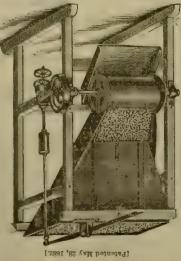
## CALIFORNIA WINE COOPERAGE CO.

SO to 40 Speat St., Sanks, Etc. FULDA BROS., Proprietors,

AT SHIP, MINING, and WATER TANKS a Specialty. CA

SO FOURTH St. Pioneer Bui'ding, Maker of the famous Mursks' sinds. Send for a trial pair. Goods tent by mail or express. JOHN T. SULLIVAN,
Pioneer Bui'ding,

THE ROLLER ORE FEEDER



Golden State and Miners' Iron Works

S27 First Street, Sole Manufacturers,

HORACE D. RANLETT,

420 Montgomery St., S. F. Ores, Mining, and Commission,

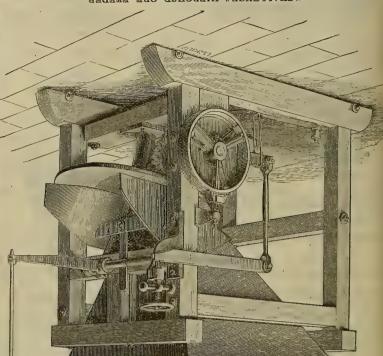
BUSINESS MANAGER OF THE TONION COPPER MINE, CARACTES CO., ONTENDED OF THE MINE, AMEDIA OO. TOTTENDENDERS IN LONGON, LINE TONION, YEARS EXPERIENCE, IN CARLON PORTS EN MINES, DOSCON TO CARLON OF THE TONION OF THE T

Special attention given to management and sales of mines and purchase and shipment of copper produce.

Under good bonds, several first-class Gold Quartz Mines tocated in Amador county on the true lead; well de veloped and teady for mills. Samples and all particulars as office above.

## JOSHOA HENDY MACHINE WORKS,

NOS. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



"CHALLENGE" IMPROVED ORE FEEDER.

superior to any form of "Roller" Feeder manufactured. We refer to the following gentlemen who have furnished as with testimonial letters to the above effect, which can be seen at our office, viz.: The est form of Feeder ever devised, and pronounced by reputable mining men to be far

M. W. CROCKER, Supt. Bunker Hill Gold Mining Co., Amedor City, Cal.
W. G. Roerers, Greenwood, El Dorado Co., Cal.
M. G. Roerers, Greenwood, El Dorado Co., Cal.
M. G. Roerers, Greenwood, El Dorado Co., Cal.
M. Tullock, Bupt. South Spring Gold Minhad many others, and we are prepared to furnish either the
"CHALLENGE," "STANFORD," "TULLOCK," of "ROLLER" FEEDERS,
"CHALLENGE," "TULLOCK," of "ROLLER" FEEDERS, "TULLOCK,

And will furnish descriptive Catalogues and copies of Testimonial Letters, and will quote prices upon application.

## Iton and Machine Works.

CALIFORNIA MACHINE WORKS,

WM H. BIRCH & CO.,

ENGINEERS AND MACHINISTS,

The subset of the stranger of t

Brodle Rock Crushers, Hydrsulle, Steam Power, Hydrsulle, Steam Power, Walk and Hand-Power Steam Engines, Flour Mill,
Dredging Machines
Dredging Machines

Manulacturers of B. E. Henrickson's Patent Automatic atcty Catobes for Elevators. All kinds of machinery accessed repaired. ELEVATORS.

#### SAORAMENTO, CAL. **DNION IBON MOBES**

ROOT, NEILSON & OO.,

Engines, Boilers, Steam

Front St., bet. M & O Sts., Sacramento, Cal. ring Mills, Saw Mills and Quartz Mills Machin constructed, fitted up and repaired. MACHINERY FOR MINING PURPOSES.

Golden State & Miners Iron Works,

Marufacture from Castings and Machinery of all Kinds at Greatly Reduced Rates.

STEVENSON'S PATENT

Mold-Board AMALGAMATORS,

Tret St., between Howard & Folsom, Sta Golden State Pressure Blowers.

MOSTMOHT SAMOH

ENKEKA FOUNDRY THOMPSON BROTHERS,

29 and 131 Beale St., between Mission and Howard, S.F.

MANUFACTURERS OF CASTINGS OF STRRY DESCRIPTION,

c. e. oetov.

T. H. WILLIAMS & OITON.

MANUP'RS OF GENERAL MACHINERY.

Special attention given to Woodworking Machinery.

Steam and Gas Engines. Correspondence solicited.

#### MINING FUGINEERS.

W. A. GOODYEAR, Civil and Mining Engineer,

Address "Business Box A," office of this paper, San MINING EXPERT AND GEOLOGIST,

BOSS E BROMNE'

Mining and Hydraulic Engineer,

NO. 307 SANSOME ST., SAN FRANCISCO.

SAW COMPANY M. W. SPAULDING



GAW MILLS AND MACHINERY



DAGE TIRE OF THE MINING AND CHRITTHE OF REMOUTHS. Per YORK (WO VOIUMES) \$\overline{5}\) Inserted in Dowey's patent binder, \$\overline{5}\) Gones additional per volume.

SHIPPING AND COMMISSION MERCHANTS, IAHW∃N

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Salphur Company's Products. Centerence Agents for the Mexican Phosphate and Sulphur Company's Products. General Insurance Agents. Burope, Australia, India, Ohina and the principal states, Europe, Australia, India, Ohina and the principal states of the Poilfo. Furchase goods and sell california products in these countries.

PACIFIC ROLLING MILL

General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass.

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Cast or Wrought Iron in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS,

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL, ALSO Steel Bods, from ‡ to 3 inch diameter and Flats from I to 8 inch. Angles, Tees, Channels and other shapes steel Wagon, Butgy, and Tred Ties, How Steel Magon, Butgy, and Tred Ties, And Several Steel to size and of next shapes, Angles, Channels, and Flow Pounds per yard. ALSO, Halfroad and Merchant Iron, Kolled Beams, Angle, Channels, and Iron, Fulge and Marchine Bolts, Lag Gorwes, Muts, Washers, Sinp and Boats Splices; Steamboat Shafts, Cranke, Prinches, Ornnecting Rods, etc. Car and Locomotive Axies and Frames, and Elecation of Shafts, Cranke, Iron, Rods and Frames, and Iron and Steel Bridge and Kool Work as Specialty, Commodive Axies and Frames, and Iron Porgings of all Hightest Frames.

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

HINOKLEY, SPIERS & HAYES, Proprietors.

CHICO. 220 Fremont St., Syn F.Lyncisco

-MANUFACTURERS OF-

MARINE ENGINES, AND BOILERS.— Propeller Engines, either High Pressure or C. mpound Stein or Side-wheel Engines,

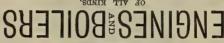
MINING MACHINERY.—Hoisting Engines and Works, Cages, Ore Buckets, Ore Cars, Fumping Engines and Fumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

Crushing, Amalgamating Pana, Settl rs, Furnaces, Re-torts, Concentrators, Ore Freders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc. MILL MACHINERY.—Batteries for Dry or Web

Mill Machinery, Saw Mill Engines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Wheels. MISCELLANEOUS MACHINERY.-Flour

Tasitavlu e'niteuT

MORKS ORE WET OR DRY.



Either for use on Steamboats or for use on Land. OF ALL KINDS,

Water Pipe, Pump or Air Columns, Fish Test Canneries Tanks for Salmon Canneries

OF EVER PROPERTION. BEOLIER Repairs Promptly attended to and at very moderate rates.

GRAIS FOR THE PACIFIC COAST FOR THE

SPECIALITIES:

Coviles Engines and Thesia Ore Pulverizers.

DEAUE STEAM PUMP.

Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater.

Ово. W. Dісків, Мападет. J. O'B. Спии, Secretary,

H. T. Scort, Vice-Pres. and Treas.

Сво. W. Ревесотт, President. Івуние М. Scott, Gen'l Manag

Office, 216 Market St., S. F.

-BUILDERS OF-Location of Works, Potrero. P. O. Box 2128.

Agents of the Cameron Steam Pump. STEAM, AIR, AND HYDRAULIC MACHINERY.

HOME INDUSTRY. ALL WORK TESTED AND GUARANTEED.

CHEAPEST AND BEST IN USE, Selv-Feeders, Pulleys, Вавт Ноізтз, Увитіватіче Каиз, Воск Вкелетев,

TRY OUR MAKE, Vertical Engines, Horizonaal Engines, Automatic Cut-off Engines, Compound Condensing Engines,

**UNION IRON WORKS,** 

ROOM NOON

This paper is printed with Ink Manufac-fured by Charles Eneu Johnson & Co., 500 South 10th St., Philadelphia. Branch Offi-ces—47 Rose St., New York, and 40 La Salle St., Chicago. Agent for the Pacific Cosat-Joseph H. Dorety, 589 Commercial St., S., F.

NEW YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President. THE RUSSELL PROCESS COMP'Y,

STEAM PUMPS, STEAM ENGINES, all kinds of MACHINERY.

SEOT to THOMSON & EVANS),

Office, 40 Nevada Block,

Dynamos and Motors of all sizes for Conveying Power from Waterfalls for use in Mines and Mills, erected under guaranty of performance.

Electric Rallways, and Apparatus for the Electric Transmission of Power.

SIOTAGE MAILETIES.

MOTORS, LAMPS Keith's Electric Dynamos

Inventor and Manufacturer of

N'S'KEILH

221 & 223 First St., San Francisco, Cal John W. Quick, Proprietor.

San Francisco Pioneer Screen Works, Orders promptly attended to

For Flour and Rice Mills, Grain Separators, Revolving and Safe Sereens, Samp Batkertes and all Mills (Grain Separators) ing and Milling Machinery. Iron, Steel, Copper, Brass, Milling Machiner, and all uses and other metals punched for all uses or butred and Slot Funched Screens, or burred and Slot Funched Screens, Milling Screens a specialty, from Mo. I to I5 (fine), Milling Screens a specialty, from Mo. I to I5 (fine),

PERFORATED SHEET METAL

Mo imitation, no deception, no planished or rotten iron used. Only gammine thusis iron in Quartz Sorcens Planished iron screens at nearly half my former rates. I have a large supply of Batchery Sorcens on han unitable for the Huntington and all Stamp Mills, which will sell at 80 per cent discount.

Rest and Cheapest in America.

BATTERY SCREEUS

GREAT REDUCTION!

SAN FRANCISCO, CAL. 8 California St., and 21 Fremont St.

PARKE & LACY

INCERSOLL ROCK DRILL CO.

THIRD EDITION NOW READY.

FOR Catalogues, Estimates, Etc. address:

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in ENGINEERS, CONTRACTORS,

WINING WEN

NOTICE TO

WITH MAPS, ILLUSTRATIONS

SEAT FREE ON APPLICATION

.HI

**WACHINE MORKS** 

EVANS

Ы

SEND FOR LATE CIRCULARS.

CTAMPS,

SESSOIS TO PRESCOIT, SCOIT & CO.

(\$2\2'00) E' O' B' FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE MOW IN USE. Concentrations are clean from the first working. The wear and each to make tests at 220 Frement

The Montake Chinited), London, October 8, 1885.

The Montake Chinited in Composition of Your Proc Vannes in a compositive chain with other similar machin, man having toated three of the superiority of your Vannes, as is evidenced by the fact of our having more of your nachines for innrediate delivery. Yours truly,

THE MONTANA COMPANY (Limited),

Protected by patents May 4, 1809; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; Febru-ary 20, 1885; September 18, 1882. Patents applied for. N. E.—Since the above was written the 50 Varners having been started gave such satisfaction that 44 addi.
ADAMS & CARTER.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

FIVE HUNDRED AND FIFTY



# Room 7, No. 109 California Street,

The present improved form of the celebrated "Triumph" Ore Concentrator possesses many advantages over any other style of Varners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner, their trames being of iron, insures their solidity, durability, and perfect stackiness of motion when operated. They are compactly as their requisite strength will permit, weigh less, reservations when no perated. They are only as their requisite strength will permit, weigh less, replaced in froigh less, in provement in the case of transportation is reduced, and occupy less mill room when set up, have noted their construction, which consists of a Ritwilk Tabler, placed in front of and which takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal motion which is imparted to this table by the longitudinal motion of the shaking frame to which the table is attached to the shaking frame to which takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal in front of and which takes the discharge from the feed and amalgam bowl. The improvement is in the respiration of the United States, bearing evidence of the enforcement supportantly districts of the abstract of and which the statement of the constitution of the superiority of this form of Concentrator, and we shall be pleased to each Gronials covering gue the feeting my and operating these pleases the discharge group letters of testinony, and, as well, directions for setting up and operating these and Gronials prices for any considerable order.

An integral of the constitution of the enforcement is a subject of the state of the enforcement of the enforcement is a subject of the enforcement o

JOSHUA HENDY MACHINE WORKS,

San Francisco, Cal. Nos. 39 to 5l Fremont St.,

C to a ft f

"TRIUMPH" ORE CONCENTRATOR

in this branch of industry. MOTIOE.—All our places are guaranteed to have the full weight of eilver agreed upon, and are tested becomplaints for leaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry.

521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material.

BATTERY SCREENS AND WIRE CLOTH

HADRO-CARRON ASSAY FURNACES, Agent for HOSKINS'

> FOY SAVING COPDI

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES.

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

SAN FRANCISCO NOVELTY AND PLATING WORKS

No. 108 FIRST STREET.

THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

Of Different Strengths as Required. GIVAL SOMDER OF DYNAMITE,

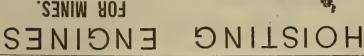
JUDSON POWDER IMPROVED. GEPVLINE-DENVENILE, Stronger than Dynamite and even Sefer in Handling.

OGHEL'S EXPLOSIVE GELATINE, which contains 94 per cont of Altro-Glycorine, and

FOR EATLEOADS AND LAND CLEARING. 1s trom three to our times stronger that and extensive and times are treely. It is as day as the ordinary Blashing Powder and runs as freely.

BYNDWYNN' MIETSEN & CO.,

GENERAL AGENTS, SAN FRANCISCO CAL.



Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link

96 Liberty St., New York, LIBGERWOOD M'F'G COMPANY,

PARKE, LACY & CO. PACIFIC COAST AGENTS,

MHEELS

IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS.

MEDAL AWARDED, MECHANICS' FAIR.

CAR

STEIGER & KERR, CHAS, E. STRICEE.

CHILLED

IBON **IANOITAN** L' C' CVALKEPP' L. C. MARSHUTZ

N. W. Corner Main and Howard Sts., San Francisco,

Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES. CASTINGS AND FORGINGS Description and Quartz Mill Machinery.

IMPROVED PORTABLE HOISTING ENGINES. ALL WORK TESTED AND GUARANTEED.

NYLIONYF BOCKEB GOYKLS WIFF

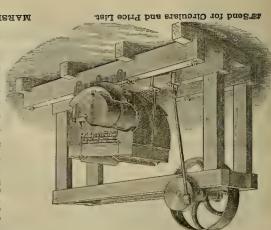
MARSHUTZ & CANTRELL, Sole Manufacturers. KENDALL'S PATENT, ADGUST 24, 1886.

examine and pass judgment upon this improved system of milling and amalgamating ores in the fol-gowing particulars: cordially invite miners to critically

10. The droping matter of the more particulars.

11. The create is less than yet after or more after the state of the control of the create of

ther ore crushing machines now We challenge competition amps, Ball Pulverizers or short over crushing machines



1AS, W. KERR,

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

MARSHUTZ & CANTRELL.

PORTLAND, OREGON,

SAN FRANCISCO, CAL,

SALT LAKE CITY, UTAH,



MINING

Machinery

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and LYON

Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST.,

SEND LOH CIHCULARS

**BOILER.** NOTJEZA

NEW AND RADICAL DEPARTURE

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

Spring Valley Water Works, S. F., I. 200 H. P. Starr & Co. Mills, Wheatport..... I 100 H. P. San Jose & Santes Clara Electric R.

Southern Psorfic R. R. Co., S. F., I. 75 H. P. Selby Smelting Works, Vallejo

California Costron Mills, East Oak

Incetion Jand

In The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

Harmony Borax Mining Company, Alameda Gas Light Co., Oakland, 1 200 H. P. Alameda...

MACHINERY

X NOIYANA

HEINE SAFETY

L. R. MEAD, Secretary. R. S. MOORE, Superintendent, WM. H. TAYLOR, President.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

San Francisco, Cal.

SAFETY,

DURABILITY,

ECONOMA'

.eau ni won tewer now in use. AND FACILITY OF INSPECTION and REPAIRS.

Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Jute Mills, and other places.

Guaranteed More Efficient than any other Boiler made.

RITSON'S PATENT GAS-PRODUCER,
WILSON'S PATENT GAS-PRODUCER,

WILSON'S PATENT GAS-PRODUCER, STEAM BOILERS of all descriptions, SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarifiers, Double Effects, ebc

FW Builders of 120-stemp Gold Mill for the Alaska Mill and Mining Company; 60-stemp Mill for Quartz Mo Mining Company.

OUARTZ MILLS—Gold and Silver, Copper and Load Smeiting Worke, Roasing Furnaces of all kinds.

AIR COMPLESSORE—RESPORE—The Preparation.

WEQUGHT—THEORY WATER PIPES a Specialty. Morre.—Have Just completed order for 35 miles of 44-incb

WEQUGHT—THEORY WATER PIPES a Specialty. Morre.—Have Just completed order for 35 miles of 44-incb

ppp of 14-inch from for Spring Files Works Company, Sam Francisco.

STEAN ENGINEST OF AIR WIGHT WORKS OF A MILEST OF AIR ENGING. Single, and Compound,

STEAN ENGINEST OF AIR WIGHT WAS AIR STATEMENT OF AIR ENGINE SAFELY OF AIR WIGHT—TO BE AIR WAS AIR STATEMENT. TO SAFELY WAS AIR STATEMENT OF AIR WAS AIR STATEMENT OF AIR WAS AIR STATEMENT OF AIR WAS AIR STATEMENT. TO SAFELY WAS AIR STATEMENT OF AIR WAS AIR STATEMENT OF AIR STATEMENT OF AIR STATEMENT.

SOURCE OF AIR WAS AIR STATEMENT OF A

**MATER TUBE** 

Manufacturers and Sole Agents for the Pacific Coast for

MACHINERY

F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS, Centrifugal Roller ZLIENT

Mining Machinery of Every Description,

SEND FOR CIRCULAR. steam Engines and Shingle Machines.

SAN FRANCISCO, CAL. No. 45 FREMONT STREET,



WINING PERFECT PULLE

**BOILER**,

Medart Patent Wronght Rim Pulley First Premium Awarded at Mechanics' Fair, 1884,
SLOT & MEER.
Sole Libensed Manufacturers of the

Montene, Wyoming, Usen and Arizone, Lightbeek, Brongeek, Cheespeek and Shonger, Wyoming, Usen and Arizone, Alexander and Arizone Lightbeek, Brongeek, Cheespeek and Sheek Balanced Pul-sy in the World. Also Manufachurers of

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco,

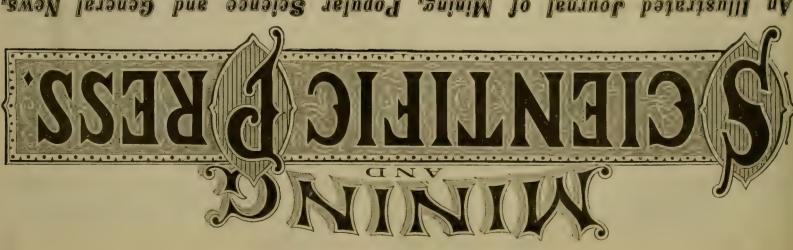
ARCHITECTURAL IRON WORK.

Ice and Refrigerating Machines, Shafting, Pulleys, etc.

STEAM ENGINES,

GENERAL MACHINE WORK,

Nos. 129 & 131 Fremont Street,



Дитрет 20. BA DEMEA & CO. liustrated Journal of Mining, Popular Science General News. pue

SAN FRANCISCO, SATURDAY, NOVEMBER 12, 1887.

The Climax Band-Saw Mill.

We present herewith an illustration of what is more as the special part of their implicity of their leed greatly increases the speed of that company speaks very highly of both the move as the 'Climax' patent band saw with which the carriage can be moved both in band-mill and steam-feed. He says the mill. An examination of the cut develope the speaks with which the carriage can be moved both in the same speaks very highly of both the mill. An examination of the cut develope the mill says the speaks with which the carriage can be moved both in the says the mill.

is hub.

In connection with these mills, the "Peer-oity-the Joshua Hendy Machine Worke—by intend introducing with these mills, the "Peer-oity—the Joshua Hendy Machine Worke—by intend introducing seam-feed gaymill carriages, manufact-of-feed gaymi Schnier of Cincinnati, Obio. One of them has

is accomplished without the necessity of in-creasing the steam or boller capacity. These mills are made by Smith, Myers &

olley. The upper-wheel shaft is also of the in diameter, and has a seafing on each side of the wheel, close to one bearings, two main bearings, one outside-theel bearing and one outside of driving wiley. The upper-wheel shaft is also of

The upper wheel has a vertical adjust-nent by which to make the saw-teeth .yol edt gairetae nedw wa

he force of the centrifugal action and he consequent andden tension of the mportant element, lightness, to reduce great strain of the saws, which are 8 and the equally and the equally trength to enable them to resist the requisite strength, as these are the two-posed of a number of pieces of thorough-ly well-seasoned maple, lap jointed and 14-inch iron pipe, and the rims are commeter, a size which is deemed sufficient to materially reduce the flexure or bending of the saw. The spokes are of The band-wheels are nine feet in the nas to bear.

vithstand the strain which it necessarily ingly heavy to enable the column to -bnoqser to abam era saoisaemib redto feet in hight, cast in one piece and mounted on a heavy base plate, and its tiality. The supporting column is 18 gance of form in design, are not forgetful of the important element of substanstruction, and, while observing an ele-The builders of these mills devote con-

creased from 25 to 40 per cent. who would it will inclode be also will necessarily aggregate a large sum in the course of a year's operations, and it will further be observed that in cutting their lumber of say ‡, ‡ and ‡-inch dimensions that even this large percentage is interest over this large percentage is in-

accumulating sawdust.
In the classes of fine and valuable wode it will therefore be noted that sewes and a proportionate decrease of

inocease or gain of 1000 feet in every since or gain of 1000 feet in every 6000 feet (board measure) of lumber ness of the saws which are used (17 gauge) but 1-12 kerf is removed, while the kerf of a circular mill is estimated at tional outlay for logs and labor in ex-eess of that required for an ordinary oircular sawmill. Owing to the thirleast 20 per cent, without any addias besseroni ed aso redmai lo sugruo oredibly informed that by their use the

cion of these band-saw mills, and we are mprovements enter into the construcfact that certain novel features and

The Petroleum Industry.

The petroleum interests of California are growing rapidly. It was only a few years since that they assumed any prominence. It was known, of course, a long time ago that

many failures, however, for there were many failures, however, for there was not much capital put up to carry on prospecting. When, however, good wells were found in Southern California, more interest was taken in the an

most of the coast counties. There were

мая тоге от less prospecting done in

petroleum existed in this State, and there

duction based on the gauges of wells page of one-half the total petroleum proyear hence there will be a complete atop-While we are increasing our petro-leum production in this State, in the temain in it. ot bewolfs at lie thgil doum oot saelnu a fuel that its use is bound to increase

some opposition to its use among under-writers, but it is so obeap and handy

more interest was taken in the anbject and more eystematic prospecting was done. As a result, several oil-fields have been found which pay well, those in Los Angeles and Ventura counties being the best. We consume more than we produce, so that considerable oil is yet brought from the East. Within the past few years the California'refineties past few years the California'refineties have been producing a great deal of refined oil, and also a large quantity of residum which is utilized as fuel for steam-making. The use of this is growing, and if the manufacturers will continue to keep it at a point where it will not "that is a point where it will not "that". They will it will not "that in the manufacturers will have sale for all they make. They will have sale for all they make. They are

be taken as an indication that the pool agents, will be able, in a measure, to control that fall, which is the only one only one of the Saxonberg-Gusher property may fund for the laboring men out of em-ployment. The purchase made lately egaw a etaero ot ai doidw mori gainto and and other producers have made a-profit and 0.00,000,000 to loog among the producers who shut in their wells. In addition to this, the Standrel, the profits on this to be divided 5,000,000 barrels of oil at 62 cents a barthat the Standard Oil Co. has set saide out. The general feature of the deal is time and August. No nitro-glycerine is to be used in the same firm and no wells are to be cleaned East they are reducing it for commercial reasons, On the lat inst. s gigantic shut-down in production began. For a

not absolutely controlled. All the big producing firms, both Standard and In-dependent have began to close their wells.

pany, which runs upward or \$15,000 monthly, and mills on the river, aggregating about \$25,.
000 more, and a list of minor pay-rolls in Silver City and Six-Mile canyon, making up nearly \$20,000 more, bringing the grand total in the neighborhood of \$232,000 for the month.

stamps, four pans and two settlers. THE ROW Alta mill on the Comstock has ten

amined at Dayton by Cometock millmen who intend introducing it, being now convinced of

IT is stated that the Rae process is being ex-

and can be adjusted while of the sawyer need to do so the perfect satisfaction, and in diameter, and has four capacity of a mill is thereby increased say 20 percent over any form of friction feed, and this particle. The need is a second plant form of friction feed, and this particle. The need is a second plant form of friction feed, and this particle. The need is a second plant form of friction feed, and this particle. The need is a second plant form of friction feed, and this particle. The need is a second form of friction feed, and this particle is the needs of greater profit is a second plant form of friction feed, and this particle. The needs of greater profit is the needs of greater profit is a second plant form of friction feed, and this particle is a need of greater profit is a need of greater profit is the needs of greater profit is the need of greater profit is the needs of greater profit is the need of greater profit is the need of greater profit is the needs of greater profit is the need of greater and of greater profit is the need of greater of greater profit is the need of greater of greater great in the need of greater of greater greater profit is the need of greater of greater of greater greate

RECHNIERS AT MYERS

#### The American Institute Meeting.

The read.

The question-box being opened, discussion was raised upon the effect of having a pair of car whoels upon level rails, with a rope coiled car whoels upon level rails, with a see was held upon its centers. The question was, in which upon its centers. The question was, in which upon its centers, and the world run if free to roll. This discussion will be continued at the next meeting. colors; if it got through before the end of the year, that it would be able (with the aid of the year, that it would be able (with the aid of the felegraph.

A paper ou "The Transportation Problem," by E. B. Meatyard, C. E. of Wisconsin, was by E. B. The output of the felegraph.

Trins discussion with the constituent are the meeting.

Among new inventions were shown and described a planing saw by Mr. Goeks; the Pailadelphis; ball castors by Mr. Goeks; the Pasteur water-filter, and the Martin fire-proof process. This latter was explained and illustrated by Prof. Henry A. Mott, the well-known sanslytical chemist.

#### San Luis Obispo's Minerals.

Ohrome, Petroleum and Iron.

state, and reduced principally in Baltimore, the only reduction works for the mineral in the United States. Platinum is found in the northern portion of Platinum is found in the northern parties. This article is exported in its crude The largest deposits exist in San Luis Obispo. The Paso Robles Leader says: Obrome iron exists in large quantities in the Coast Range.

Asphaltum exists in immense quantities in the Coast Kange. Large deposits are found in San Luis Obispo, Santa Barbara and Ventura

Alabaster, marble and granite are found in Alabaster, marble and granite are found in large quantities and of the finest apecimens.

Coal, borsex, sulphur and salt are found in large quantities. In 1860, valuable deposits of coal were found on the north slope of Mount steam navigation. In 1870 there were 129,761 found, and in 1869, 135,227 tons shipped to San Francisco. The most extensive salt works are in Alameda county, near the Bay of San Francisco. The most extensive salt works are discontinuous and in Marada and in Marada and in Alameda county, near the Bay of San Francisco.

duced.

Mineral springs of every variety exist in double of every variety exist in Mineral springs of every variety exist in abundance, many of which are highly valued for their medicinal qualities.

Mext to quicksilver, the chromium deposits of the county are proving of great extent and value. It is an article of great commercial value in the cutte, and as a pigment, The substance known in commerce as the sequioxide of porcelain, dyented at the commerce as the sequioxide of potential in commerce as the sequioxide of potential in the cutter, and the United States, Stepland Isles, the greater portion. Herefortor the othermore as the Beater, Stepland Isles, and at the Worker pottore the district known as the Bare Hills, near Baltimore, afforded the greatest supply in the Outleding Lowan as the Bare Hills, near Baltimore, and the with a prophice of other of services of demand for the purposes and workers of better with an and other which are supposed to be known, and other which are grouply the deficit the metal, the old fields are gring out, and bas genorely controlled the metal, the old fields are supposed to be and other which are grouply the deficit as hereforer enjoyed a monopoly in this line, has bereforer enjoyed a monopoly in this line, and has generally controlled the markets, proving for near one auch prices as the company fixed ing for the ore such prices as the company fixed and have generally controlled the metal, though as

The Chrome Reduction Works

unto be electricity. There is no practical steam plow.

In. Hexamer suggested the possible use of dividence of the sir directly as a terbilizer, and offered this as something for the polytechnic Section to bring about.

President Grimataw remarked that the one of rather a hard nut to be given to the first one of rather a hard nut to be given to the first one of rather a hard nut to be given to the first one of rather a hard nut to be given to the first one of the photographic Section.

President Mewton of the photographic Section, a gentleman who had been among the first to one/ out the development of a dry process, and who gave the results of his researches free to the public; who had the largest private lab.

President Mewton in a few well-hoseen remarks spoke of the stanksess of enthusisam, and of the desirability of these Sections working together. He intimated that the framers and of the desirability of these sections working together. He intimated that the framers and of the desirability of these Sections working together. He intimated that the framers in the follow would be held responsible for any loss of entitle of the eventing upon the featifier of the section shoutery.

President Mewton had imposed one upon the framers in the Polytechnic Section should reposed a struct flack that the electron should repose a truck in the Photographic sitets one upon the struct in the Photographic sitets a concept shad that that the structure of the flack one upon the structure of the the greatest value. This substance is generally known as silicia, and is the remains of ages, and by chemical agents changed to the form in which it is now found. It cannot be formed distance.

Several deposits of silica have been found

Several deposits of silica have been found

throughout the county, particularly in the wir

project and the Corral de las Mulas. The deposits at the latter place have so far proven of

the greatest value. This substance is generally

the greatest value, it is the remains of migute

The Polytechnic Section.

At the first meeting of the Polytechnic Section, New York, Oct. 13th, Chairman Bedford welcomed the audience and spoke of the great

nability to be present at the opening meeting shaw with commendatory words. The latter read a letter from Mayor Hewett regarding his past year. He then introduced President Grimprogress that the Section had made during the

inability to be present at the opening meeting that and selecting that an organisation in Mew York and destring that no organization in Mew York had done more than this body in the past boward diffusing knowledge.

President Grimshaw in a few words called the steption of the members and others present out the feet that the comming year would be more agrees early of the level that the comming year would be more agrees and bad been dy virulated giving the concerning the Section of the levelures to be given and papers read, work, and, as far as possible, the program work, and, as far as possible, the program work, and, as far as possible, the program of the levelures to be given and papers read.

The method proposed by the Section for its fortures to be given and papers read.

The method proposed by the Section for its fortures the lectures of the forture that there is the papers of instended to the reading room, making the entire fact of the forture of the forture of the contract of the contract of the forture of the forture of the contract of the course in the regularly giving lectures and the first papers from the papers for the contract of the forture of the contract of the course of the course of instended to the reading room, making industrial pate to the member of the course industrial arts, some of them holding very prominent positions. The members of a well-there were applications of the members of a well-there were making inquiries with a view to be set of proposed to the contract and institution and the Section.

The patential in a body to the lattic tion and the Section.

The patential in a body to the leaver of the lattic.

vores.

Arrangements have been made to have the movers.

Arrangements have been made to have the hearing and technical papers, and to the verse the daily and technical papers, and the same strates of the proceedings publish, the little Buller four rasls. In addition to this, the little Buller tim which has proved so desirable will be issued as more than and also have and also have and also have a the more than the more than a supplier than the little for the little f

tant, tabwoq then the the these powder, that dissolved into boled the which which a converted into report, head risen from the earth. The drops of deep report head risen from the earth. The drops of deep rebring the trees the trees of crystal, the trees earlies the trees the produced a dicharging their asp, the bowders their trees and grands of the means of the controls which we are independent of the produced a controls which we have a declarated to the controls of the con

#### Rushing to my Heart,

Which was palpitating violently, my Meart, being was vibrating, and I felt younger and more fervid. I was breathing electric efflurations dotts. The rising and was vibrating to the control of the fresh fragrant, free and pure sainst fabe horizon, and with repture I was inspiring the fresh, freeling all the joy of the saits and thinking of I know not what solden-hird sheels. I resolved the place was the fresh and found myself pertified with surface and part of the place was a fand found myself pertified with surface of pressions of love, pressions of saits with its place was a mass of rubbish, of ruine, of pieces of grantfe, and a fand with surface was a mass of rubbish, of ruine, of pieces of grantfe, and a moving face was a mass of rubbish, of ruine, of pieces of grantfe, and a moving face was a mass of the surface. I comprehended all. The terrero of the stone of piece was a mass of the surface with a ruing of out and slipped from my stone, of the certification with the surface of grantfe, and is the surface of the surface o

"Yere Haspened Here?"

tion which has proved so desirable will be issued if in which has proved so desirable will be issued if the Month of the Section, and also at designated the officers. In conclusion the president thanked become in the work of the Section during the section during the beaver to the close of t in what has Hase Happened Here?"

I inquired of one of those who were removing the debris, (In peon dislect) "Yothing, sinov ano. Dies lo dispuse ansina (God dispuse the control of the c

(To be Continued.)

MINKE IN BOLIVIA.—The Characo gold mines continue a theme of speculative topic. A correspondent thus appears of some of the lodes:

"A great many mines are being worked, but the lief is too long for publication. I will menow the lief is too long for publication. I will menow the lief is too long for publication. I will menow the lief is too long for publication. I will menow the late a pear, and the converse have taken out the late and the special profession of San Lyrenzo produced \$\frac{2}{2}\$ Filegrammes of gold. The Perseverance of San Lyrenzo produced \$\frac{2}{2}\$ The Perseverance of San Lyrenzo produced \$\frac{2}{2}\$ The Perseverance of the state of the general run of the confession of the first \$15 days it was worked. Quartz taken out of a mine at Hamolines gives \$650 ounces to the ton, but the general run of the ounces to the ton, but the general run of the one is said to be only \$30 ounces to the ton. A public mine, and the average lay of the corfers to the ton, but the general run of the one is said to be only \$30 ounces to the ton. A public mine, and the average lay of the corfers of the ton, but the general run of the one is said to be only \$30 ounces to the ton. A seasying from four to five ounces to the ton, but the sunce a cross the sacrific and the same and the core that \$30 ounces to the ton. A late of the same of the core trunced out recently in one day 95 bags of ore, which has \$30 out the same of the same of the net of the core of \$300 bags. It is estout the net the net to the ton the same the same of \$30 out.

When the same is the same of \$30 out.

The same is the same of the same of \$30 out.

The same of the same same of \$30 out.

IRON IAOE.—Beautiful lace and other figures of the most delicate description are now made of the most delicate description are now made. A lack more increase of the mold into which the molten metal is to be poured. It is moud that molten iron ean be run upon the most delicate fiber, after it has been carbonized, without injuring the earbonized fabric, every without injuring the earbonized fabric, every thread of which is thus produced in delicate fiber as the earbonized in delicate increases.

The Mines and Miners.

BY PEDRO CASTERA,

[Translated for the Press from Et Minero Mexicano by M. M.]

(Vontinued From our last.)

Nothing is more monotonous than watching in more more more than in a mine, nothing which better illustrates the Cambrandt with dark ground and luminous, gives an exact ides of my surroundings that pieces the constructed with Agrees and minicularity. A great one constructed with planks

pives an exact idea of my autronidings that in the base of my autronidings that in the base of my autronidings that in the base cross of a forest room constructed with plants of the content of the content was filtrating, burn, and cashing in the chimney and cashing a reddish light; some beds, many arms and a state wood creeding in the content of the country of a protein, which are completed by the groundwork as picture, which was completed by the groundwork as picture, which was completed by the groundwork as time a picture, we were emptying from time to the table, we were emptying from time by the state of purch, and the state of the content of the coling the state of the content of the coling the state of the complete of the coling the state of the complete of the coling the truching the state the oracline of the coling the state of the complete of the content o eM behauoring on W snoinsquo of T

The Oompanions Who Surrounded Meeting to lorger train ton.

Had their families at the capital and were precladed from their conveniences, from all their concerns, in mestic snighments, from all their concerns, in order not to leave to other hands the exploitation of the treasures which an imagination, the fatigue, had auggested. It exclarge for the sweet peace of a tranquil freside they had the fever of ambition, the integes of the transport of angular developments. The fatigue of labor and the final fines a fatigue, the fatigue of labor and the fatigue and unchained in those and the fatigues of a fatigues of the fatigues of the peace of a fatigues and the fatigues of the fatigues of the fatigues weakly in a fatigue were also a fatigues of the fatigues of While In that Drowsy State,

There came to me these graphic lines of Cam-

"Y luego que le noche hubo pasado, Ella cerca de mi— ¿ Por que te alejas tanto de mi lado? Tengo miedo sin ti—"

"When the night of that day began, She, at a distance from me— Wby dost thou come so near me? she said, I am aftaid of thee.

"But as soon as the night had passed, She, near to me— Why dost thou get so far from my side? I am afraid without thee,"

Thus thinking, and guided by the hand of the pand of the angel who keeps the dots of the panets of the angel who keeps the dots of the panetstaing and dreams. I went to sleep, with the penetrating gazs of the blue eyes of that guardian upon me, £4 o' obtoick max morning, by the tramulous hight of the stare, I started for the City of Maxnos, and the condition of the confilms and I have, and I determined, and the stare, I have a super the condition of the mined to stop in order to say fareache the evening heppy couple from whom I parted the evening one of those delicious dawns which only our oil. The couple from whom I street the evening the earth, and with the exquisite fresh, moist fabe earth, and with the exquisite fresh, moist fabe earth, and with the exquisite fresh, moist oven the lawses, were discharging aromas, and impregnated with I know not what dor of howers. Hot only the buds, but I believe that cover the lawses of loaming the sorted the sorge of thousands of birds, and the earth where saluting the coming day.

Where a saluting the coming day.

Were saluting the coming day.

The Horlzon was Diaphanous,

The sky serence and bordered by light cirrus, white and spumons, which were passing through white and spumons, which were passing through that colors of the trainbow like immense opals that might have been incrusted in that sapphire of deepest blue. The snow of the volcanoes was needing the sun, and the distant hills and was greeting the sun, and the distant hills and walleys were covered with a kind of undulating verse.

Lines, A12 0.1 Magneste, Mc O. Cocob, K2 0.1

concrete the contraction of the state of the

This sold onne from; is the question.

This season's Explorations.

This season's Explorations.

On Forty-Mile oreek reached about 130 miles up from the mouth, and the gold was still confinuous; and it was also found in paying quantities on several small tributaries putting into this the gold comes from quartz ledges is it. That the gold comes from quartz ledges is an established fact, for float quartz carrying respect to the gold comes from the gold comes from quartz ledges is a found along the streams. Steal's \$32 nugget is found along the streams. Steal's \$32 nugget out a number of small nuggets composed of out a number of small nuggets of number of small nuggets of quartz and the gold account in the fact outing through the state formation, carrying no gold visible to the eye, and it send of quartz contring through the state is origin in the deaders. It undoubtedly has its origin tion in the Alaskan range of monatains. On the backs of quartz somewhere near the heads of the sum of the fact of quartz somewhere of monatains. On the sum of the fact of quartz somewhere of monatains. On the sum of the fact of quartz somewhere of monatains. On the sum of the fact of quartz somewhere of monatains. On the sum of the fact of quartz somewhere of monatains. On the sum of the fact of quartz somewhere of monatains. On the sum of the fact of quartz somewhere of monatains.

Here of quartz somewhere we have a sum of the sum of the fact of quartz somewhere of monatains.

On page of quartz somewhere we have a sum of the sum of the fact of quartz somewhere of monatains.

chunks of the tenance, I presed several dinnity of flow the tenance of the several dinnity of the tenance of the several dinnity of the tenance of copper stein, but did no prose a great deal of copper stein, but did no prose to the several deal of copper stein, but did no prose to the several deal of copper stein, but did no prose visions has been deal of the distance of the distance of the prosest and the several did not be several did not the several did not be several did not did not be several did not did not did not be several did not d Oame in. It yielded from \$8 to \$11 per day day deme in. It yielded from \$8 to \$11 per day deme in. It yielded from \$8 to \$12 per day deme in. It yielded from \$8 to would a hield a peicec, and who would a lawys he much more, owing to and we would take out much more, out \$70 days to work out \$10 to be days to work out \$10 to \$1 Rich Copper Ore

#### Alaska Gravel Mining.

surface ground on the Yukon is frozen solid to a depth of several feet, It is all the more so when we come to realize the fact that during It is remarkable, indeed, that so much of the

The Yakon Region.

Facts About the Interior of Alaska.

Tested throughout the county, the principles of supports of the county, the principle of its being deposit being on the Arroyo Grande ranchou the county, the principle deposit being on the Arroyo Grande ranchou and the form of the principle of the solid state. This support to the solid selected throughout the county of the solid selected to the solid selected to the solid selected to the solid selected supply of the cost at some remote remote ocast large quantities of solidided aspinalium set dur out of the soli, sovidently being defence by the costs at some remote posited, Considerable of the hard aspinalium is being defence by the cost of the part aspinalium and principally for roofing burposes, and gives being dug out and sent to San Francisco and profit the control selected the profit of the control selected with cost of the selected with cost of the control selected with cost of the selected with cost of the selected with cost of the control selected with cost of the country. Specimens of the received of the past two over the mines during the auminer there worth the informed by merobants for digiting at the law supply.

Sold has been found at the past two over the mines during the past two over the mines during the auminer the selected where the might prove of three months in water system of the last presents the working the last of the last of the selected with water or and sittitle of the selected beared by an investment of the beared by an investment of the profit of the past with the past working the selected beared by an investment of the solut of be a small risk and expenditure for a solution of the past such that will be selected by an investment of the solut of be a small risk and expenditure for a solution of the past such of the selected by an A correspondent the Intertor of Alaska. Free Press writes the following interesting letter:

I jeft Junean early last spring for the new Ell Dorado, the Yukon and itse tibubastics. It is took passage to the portage per steamer Yukon, for my outh. The latter consisted of structured in the portage for the portage for the portage is an analysis of the portage is a spring shown of the portage is a spring a spring shown of the latter consisted of structured at the portage is a spring a spring shown of the portage is a spring a spring shown of the portage is a spring a spring a spring shown of the portage is a spring shown of the spring shear shown is spring shown of the spring shown of the spring shown by chemical process, but is the result of the working of natural agents during the period of ages. The enbetance produced by the Pacific Magic Polish mines has been subjected to secural analyses, the last giving:

#### Construction of a Boat.

This consumed three days. When finished it was a substantial structure, but very unwieldy, but nevertheless answered all purposes. My first day on the river was nearly as hard a one first day on the river was nearly as hard a one first day on the river was nearly as hard a one count of slush ice, which was running very thick, and my boat would get into a jam and the whole would become oldged in some eddy, when the whole would beat deal of labor it could be extricated. But I finally got the run of the stream I found that my boat would float the of was to after ofear of the larger jams. When it got too dark to run with safety I had Well at it got too dark to run with safety I had willed into shore and putched camp for the pulled into shore and putched camp for the night. Traveling this way I reached the night, Traveling this way I reached the noth on

#### Stewart River,

Which is about 600 miles from Chilkoot, or the baad of tidewett. Here I met a party of hand lead of tidewett. Here I met a party of miles in tidewett. Here I met a party of miners, who indicated me that the big excitetions where we have known as forty-like of the content, and also those who had come in that they were also going to pull for that place spring before me, had gone on down, and that they were also going to pull for that place they were also going to pull for that place herety. Being a stranger in the country, and then following day one more boat cupant bound for the new discoveries.

I could do nothing better than follow the exciptement, so the following day one more boat other more following day one more boat cupant bound for the new discoveries.

The current was strong, and I week, or attived some days before me, and were board for the same place, we stated for the new camp. The troes we stated for the new camp. The mouth of the river, or

#### Forty-Mile Creek,

The mouth of the river, or the condition of the river, or Town and the condition of the river, or Town as reached in one day and a half, being all down stream and a swift current. Here we found in the neighborhood of 25 men preparing for second the river, and we were informed a stready started up. This stream is a very large and swift one, and we readily perceived their twould be no entire in the stream, and that one man slone ignes in the condition of the cond Out the projectors, and a great define to out of the projectors, and a great definite to out the boncers of the pioneers of the Sheep mountain country, where he and his partner have been at work to came in on Tuesday from the Seatoam district, where he and his partner have been at work to came in on Tuesday from the beat of the Baldwin. The claims of the Baldwin, and partner, Mr. Baldwin, The claims of the Goat, seement work was done on the Baldwin. The claims on which as the Sheep mountain out the prospects of Baldwin which the control of the control of

THE public debt was reduced \$18,633,695 in October, and it has been decreased over \$40,00,000,000 aince June 30th. Oceanrose of the Manhattan Mining Oo. of-er to withdraw pending attachments, providing the money to pay the employes is forthcoming.

EXTINGUISHING FIRES IN MINES.—The Ameroican Analyst gives the following ingenious plan
ican Analyst gives the following ingenious plan
inconstitution of the following ingenious plan
inconstitution of the following ingenious plan
incolor extinguishing a fire in a mine. The Caluincolor and plan is the most extensive
incolor and plan is the most extensive
function and plan is the most extensive
angines." Which support the pumps and "man
engines." Which support the pumps and "in an
engines." Which support the pumps and it was
functioned by the world be extinguished by
eteam, which was poured into the level in great
der Agassix of Boston, president of the mine
den Agassix of Boston, president of the mining
facing 500 feet into the mine. Prof. Alexander Agassix of Boston, president of the mining
formpany, arrived on the scengs is lew days after
company, arrived on the scengs is we amining
late broke out. He conceived the mining
the fire broke out. He conceived the mining
unfactured in great quantities and forced into
the mine by heavy pressure from the engines.

The plan was entirely successful, and when the
the mine by heavy pressure from the engines.

The plan was entirely successful, and when the
the mine was opened a few days later, not a trace
of fire remained. An engine was then set to
over pumping out the gas and another to loreover pumping out the gas and another to loreing in fresh air.

The March Mines Mines of the Oc. Of-

composed mention of the possibly makes it.

In this book composed mention of the possibly makes it.

In this composed mention of the possibly makes it.

In the possible we had not been composed mention of the possible ment in another day, But beyond this it was no got see by Jewes in the beyond this it was by it was no it was a bare to be was it was a been well income to be well and the bear as the was now beginning to come only and in but a short time afterward our little out the bear was now beginning to come by and in but a short time afterward our little bear was flooded. We then began to prospect for high begt waste not successful. Meverther but our search was not successful. Meverther but our search was not successful. Meverther the wastened by the

in the future. the past half-year in developments, the direct-ors expect the rate of progress will be increased 15 drills are constantly engaged in exploratory work; therefore, great as the increase has been drills at work in the mine, of which not less than total dividends paid by the company aggregate \$347,307, There are now 30 machines and each half-year since the first half of 1885. The

besses passes before the Act was passed. properties of any known value which they decompany had already acquired all the adjoining company, as the law is not retroactive, and the at in me way detrimental to the interests of the The passage of the Alien Act in March last precludes this company from acquiring any further mining property or real estate in the furtherw, but the directors state that the Act

#### Providing for Inspectors of Mines.

ly taken by mine-owners that in all proper cases ench provision is made, because not always, as in the case of the Com-stock mines, will ench precaution be voluntarimine inspectors, whose duty it would be to see decing further on this subject it has ccourred besting further or the besting and subject of the properties of the courted for or other cause rendered unavailable. In reordinary means of egress be through accident We had in our lest issue something to say on the duty of mine-owners providing suitable exits for underground workmen in osse the

wise, occurring during the year, and the general well-being of the employes; also the quanmines; the number of accidents, fatal and otherumber of men employed in and about the wider field, their reports showing the total confined to this one matter, but cover a much inspectors and their deputies are not, of course, to the Secretary of State. The labors of these spectors making annual reports of their pro-ceeding to the higher authorities, in England the health and comfort of the latter; these inalso, the existence of conditions unfavorable to cause of danger to the lives of the workmen; officers of this kind are appointed, it being the business of each one to carefully examine every mine in his district, with a view to ascertaining the presence therein of this or other caning the presence therein of this or other cases. In all the leading mining countries of Europe

warrant ite being so carefully looked after, it is ot enastroqmi aguone to bemeeb si ssenisud edt If in these countries, where mining is confined almost wholly to the useful metals and minerals, tity of mineral produced, wages paid, etc.

seeful should be engrafted upon our mining deal that experience elsewhere has shown to be But the time has come when we may and should adopt these better methods; when a great subject of eareful experimentation and study. improvising much that could there be made the n a hurried way, to get along with make-shifts, for which, in these older countries, provision could easily be made. We have had to work products. It is true, we have on this coast been compelled in times past to dispense with many of the safeguards and even the economies industries and covers a much wider range of to ccupies such a prominent place among our certainly entitled to equal attention here, where

quiesce in such policy but do all that lies in his that end, the mine-owner should not only sogood, shall see fit to adopt measures looking to toil in the depthe and to promote the public w sends to enaitew and streng of those w now the properly constituted authorities, moved in bas ";[liw teews awo sid " gaidtyteve teon price. He has, indeed, been left to work in alhave been thrown open to be occupied and usthout by him slmost without money and without all things had his own way. The mineral lands mine-owner has heretofore in pretty much unduly interfered with. It has been left, if anything, too much without such interference. early acceptance. No one can complain that the business here has by the Government been system, this provision for inspectors of mines being one of the things that should meet with

surveys will have to be made, and military profit of the half year ending June 1887 was workings. Nor would the existence of this new posts planted in that country, the Government profit of the half year ending June 1887 was workings. Nor would the existence of this new might, perhaps, find it expedient to open other \$\frac{147}{293}\$. The profits have gradually increased class of officials at all add to the burdens of the underground employes by increasing the ventigreatly promote the health and comfort of the since, if not useful in the emergency contem-plated, this additional opening would tend to not always be to the proprietor a dead loss; exit from the mines is concerned, this would In so far as the expense of providing a double power to make it effective.

> therwise to them would be inaccessible. trails leading to the interior, which, besides so subserving public uses, might be availed of by prospectors and miners for reaching points that

largely to the public income, in which view the Government might be fully warranted in de-parting a little from what has hereforore been nore than partially developed, may yet add will be the revenues we shall derive from Alaska. On the other hand, this wealth, if no ot be made practically available, very slender apart from its mineral wealth, and if this canand explore that vast and forbidding region should be done. The country is worth little ently do to sid the miners and others to reach favorable route. We can see no reason why it should not be made. Certain it is that anything the Government or its officials can consists yd noitestib tadt ni seliticsol mori gainrater afford the miners opportunity for reaching and other small craft, as such an arrangement would enue cutter near that place, with instructions to make an occasional trip between Cape Spencer and Yukutsi bay, a portion of the coast that cannot safely be navigated in cances of that salvisable for the Government to station a rev-The Alsakun, published at Sitka, remarking on the difficulties the miner encounters in pene-trating that country, suggests that it would be

of the country, why may it not in like manner be good policy to build trails for the purpose of promoting mineral exploration and mining opanoitose enter to remigration to remote sections ot absor-nogaw tourtence of tneibedxe ti bancì ing better means for reaching the extensive country it opened up. If our Government has proved a good one by reason of this route offergings never amounted to much, the investment and more practicable route was opened to the mines on the Upper Fraser, Although these digknown as the Silloit trail, by which a shorter ai tadw guiblind ni 000,001\$ revo bebaegze aid citement, the local authorities of British Columour policy in these matters. In 1858, at the time of the Fraser River ex-

#### A Profitable Mine.

3881 ni ;07.32\$ saw ti 3881 ni ;34.41\$ saw not depth. In 1884 the average value of ore per 150 feet from the surface. The average value to the ore is gradually rising with increase of nent as any ore found below the Cruse level, yields as readily to the present mode of treat-128,388 tons, or a total of 204,575 tons. The ore on the 700-foot level is more oxidized, and serve ore in sight is 76,187 tons, and low-grade ed 40,000 tons of good ore without drawing on its reserves. The estimate of high-grade reixed "The Montans Company" they did a good thing. During the last half year the mine provid-Orumlummon property in Montana and organ-When the English capitalists bought the

exceeded that for the same period of last year production for the first six months of this year \$329,402. In the high-grade mills alone the the half year ending Jane 30, 1886, it was \$796,789; increase of six months 1887 over 1886, year ending June 30, 1887, was \$1,216,191; for The fort of a fine of the fort of a fact of T it was \$43.77, and for the half year ending June 30th it reached \$48.46 per ton.

£115,000 were remitted on this account. 1886 were £70,000, whereas in 1887 the sum of put for the first six months of 1887 \$329,402 over the previous similar period. The remittances on account of profits for the first half of past half-year, making the total increased outgmess-00 ett, esserori shio to the serg-wol string shown string the string shows \$241,982 during the treated was 1538 tons less. by \$87,420, notwithstanding the quantity of ore

126, and placed to its credit \$49,514, which is a \$143,346; reimbursed its cost of operation, \$49,slone repaid the total outlay on its erection of st of \$2.83 per ton. This mill, in six months, ata \$289,842\$ bebleiv doinw ear to snot 148 The 60-stamp mill crushed and treated 17,-

sand 174 feet of shafts and winzes. 2382 feet of main drifts, 225 feet of crosscuts pretty good record.

During the last half-year the company ran

the total being nearly \$500,000, and some \$50, the rate of 30 per cent per annum respectively), Out of the net revenue account for the half-year two interim dividends have been est interior

#### The Exploration of Alaska.

has not gone in encouraging mineral research, stion and occupation, but beyond that the law deposits, much less has it lent any aid in working them after they are found. The entire public domain has been thrown open to explorlerenim to senim for mines or mineral little or nothing in a direct way to promote the policy, but the General Government has done for this sort of discovery been contrary to our ported. Not only has the offering of rewards gress for the discovery of a workable deposit of thin this country. But this was a mistaken notion, having been due, presumably, to our poverty in that metal, of which we consume immense quantities, the whole of it being imernment. The idea widely obtained at one time that a premium had been offered by Con-The plan of offering bounties for mineral discoveries, common in most other countries, is one that has never been practiced by our Gov-

plest implements in a pair of willing hands require any help in opening them up, the simand exploited that no bounty was needed to en-mourage their discovery, nor did the miner which, of course, it was not. The next large industry in this line was mining for lead. Here again the deposits were so easily found onld be rendered, had it been required, mostly on private lands, no Government assiststances, been a wise one. The first mining done in the United States in a large way was mining for cosl. But here the deposits being r seststing the miner. The course so pursued has, under the oircum-The course so pursued has, under the oircum-

wise favorable climate. With some few exaction. The territory to be explored was of comparatively easy access, could be readily traversed, and possessed a beatthful and otherrather than holding out additional incentives to conditions for its successful prosecution, that there was need for calling into play such restraining influences as could be brought to bear engaging in that industry, and so favorable the silver mining, so great were the inducements for When a little later on it came to gold and .bae tadt ot gainfing

ceptions living was cheap, life was safe, and the

of bounties is, of course, not required for the discovery of either the precious or the nseful metals there; enough is known to give assursistance in carrying on that work. The offering for the General Government to lend some asmuch greater that it may be found a wise policy any other portion of our public domain; so be attended with much greater difficulties than thing considered, the exploration of Alaska will forests, and its irredeemable sterility. Every mountains, its brief summers, its dark, damp with its penetrating frosts, its snow-clad on our hands in which all these favorable condi-tions are reversed. Vast and gloomy far-off Alaska invites with its riches while it repels working season was long. But we have come at last to have a country

The Indians for packing over this mountain ains, which necessitates a long portage in which an elevation of 3500 feet has to be overcome. this route is the passage of the Chilcoot mount-The great obstacle in making the journey by are on the Yukon and its tributaries, a section of country best reached by the inland route. it. As yet the principal placer mines discovered few have the courage or the means to undertake expense and such extreme hardship, that only a much time, and being attended with so much interior; the journey thither requiring now so deposits, especially those situate in the distant many parts of the Territory. But the trouble is to reach the sites of these ance that both abound in some and probably in

Now, it seems to us that the Government, in snow has mostly left. charge \$13 per hundred pounds and a good deal more if the crossing is to be made before the

Yukon digginga. As it is likely that public much the brief working season had in these os yd enertenent to the miner, as it shortens by so making this portage, much time is lost—a serido, or will otherwise be able to do. In perhaps a wagou-road across this range, and thus enable the miners to get over it with their supplies much earlier and at less cost than they after require, might construct a pack-trail or mails and such other freight as they may hereorder to facilitate the transportation of the

> SCIENTIFIC PRESS MIKING

DEWEY & CO., Publishers.

Office, 220 Market St., N. E. cor. Front St., S. E.

Terms of Subscription.
Annual Subscriptions will be defined without cash in advance. All arrearages must be paid for at the rate of \$5.60 per annum.

Advertising Rates.

Lowdon Aceny-Alverd E Ann, 63 and 64 New Broad Street, E. C.

Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Our latest forms go to press on Thursday evening.

Entered at S. F. Post Office as second-class mail matter

SCIENTIFIC PRESS PATENT AGENCY.

A. T. DEWEY.

Saturday Morning, Nov. 12, 1887. SAN FRANCISCO:

#### TABLE OF CONTENTS.

EDITORIALS.—The Olimex Bend-Saw Mill; The Petroleum Industry, 360s. Pesterior Industry, 170s. Pesterior Plasker, A Profitable Mines Providing for Inspectors of Mines, SIS. Our Stamiltorous Phan-toms, Acomy, Academy of Sciences; American Iron Funnaces, SIS.

818.
ILLUSTRATIONS.—The Climax Patent Band-Saw Mil, 805.
MIGOELLA VEOUS.—The Vines and Mineral American Institute Meeting: San United Districts and Windress and Windress and Windress and Windress and Well-Groun Region; Alaske Gravel Mining, also, 307. A Well-Grounded Complaint, A Short Zine Assay Meibrol 311.

Assay Method, SII.

ARBOHANIOAL PROGRESS. — Carved Ornaments; Wood-Turning; Increase in the Length of Rails; Pulverized Price; Built-Up Timbers; Castor Oil

Four Elements, SIO.

USEFUL INFORMATION.—Care of an Emery
USEFUL INFORMATION.—Care of an Emery
Wheel, Unexpected Explosions; Why Men Fall, The Halls; Turpetteer, SIO.

SOIENTIFIC PROCEESS.—The Three Forces—
Physical, Vital and Psychic; A New Test for Lead;
Singular Illusion of Vision; Insect Esproduction; The

Fubrac of Pinsh Expires, American Workinsen in Edity, 19 Septics, 19 Marks, 21 L.

Encops, 70 Eughner, 70 Munic, 30 Munic, 21 L.

Encops, 70 Eughner, 70 Munic, 70 Munic, 21 L.

Encops, 70 Eughner, 70 Munic, 70 Munic, 19 Munic,

#### Susiness Announcements,

Mining Property—larsel W. Knox.

#### Passing Events.

ing for oil is being carried on in several of the yielding some 1400 barrels daily, and prospect-The Ventura wells alone are said to be which experts are now investigating. The pe-troleum interests of the State are rapidly widen-There is a report connect, and Ventura county, fields have been discovered in Ventural The perchial experts are now investigating. The perchial There is a report that new and extensive oil-

not be carried on generally during the winter of the cosst where mining and prospecting canshout this time every year from Alaska and the other more mountainous and colder Territories for the winter. Mumbers of them come here Vio sidt ni redteg to gainniged ere sreniM southern counties of the State.

rsin. Many ditches see dry and many mills "hung up," necessitating reduction of force of men until the rain comes and furnishes the nec-Miners in this State are anxionally looking for

In the northern Territories there is more or essary supply of water.

course, provoke vigorous opposition on the part of the miners, who, considering the dangerous work they are called on to perform, think they get little enough pay as it is, past week. Any movement to that end will, of less talk of reducing miners' wages, and even in this State the question has arisen during the

Squaw valley, Freeno county. A HINE ledge of limestone has been found in

1805 to saot 564,62 THERE Were shipped from Tacoma last month

American Iron Furnaces.

perience showing that production has been in the inverse ratio of the discoveries made.

to put a stop to this business of discovery, ex

that is required to make them productive being persons of impaired vision. We believe there are valuable deposits of tin in this country, all

ot egatusvba seelinam diw bus teeretai yna ot

might be done; the pocket specimens might nn-dergo some enlargement without prejudice

put to an unreasonable extent. This, at least,

tuo a total of air tons or 63 is restricting the out-

souim rieds to tonborg eds gaisimil seds simdus

make this metal a drug in the market,

mine-owner. Being creatures of the law, their non-production. Of course we can understand alaries would, of course, be paid out of the capacities of their mines, might hesitate to problem for all they are worth, and so personal control of the capacital of the c

Car Stanniferous Phantoms.

Very aptly do the tin discoveries, or rather se reported discoveries of that metal, illustrate

e ordinary deposit of gold or silver. oed weiv of view of the world, in an economic point of view, be of in world, in an economorphism of the world would be seen that of the world would be seen that the world will be seen to be seen that the world would be seen that the world would be seen to be seen that the world would be seen that the world world would be seen to be seen that the world world would be seen to be seen The finding of a workable deposit of lla ai resta sharon y leger in all mand for that metal, coupled with the fact that it occurs in comparatively few localities, has neequent large and steadily increasing dethese and other mineral finds while yet in an embryotic state. The great utility of tin and the tendency of the average prospector to over-lo sonatroqui edt estraggara os bus estimate

tin in part, at least, from home sources, that a important was it deemed by our Government that we should obtain, it possible, our supply of

States; this offer having been withdrawn some large bonus was offered for the discovery in quan-

ave or six years ago by reason of the annoyance

The first deposit of tin found on this coast, or, indeed, anywhere in the United States, was in 1853, the site being in the Temtended discoveries made.

seal mountains, San Bernardino county, Cal.

A company some years later was formed to open and work this deposit, considerable money hav-ing been spont in the furtherance of that pur-

the company, the product of which, it was ex-pected, would soon pat an end to the further number of favorable reports on the property of

not lacking at the inception of the business any exe having deen se acanty that it is kept on ex-biblicion as a curiosity ! O! course, there was Of senior esect to toubord edt, theises resoning pose—result, some fine samples of cassiterite to be seen in the State Cabinet; also, divers minia-ture dars of tin deposited in the museum of the

1866 the discovery of an immense deposit of this ore was reported. Whether the staff existed at that point in large or small quantity Owyhee creek, Southern Idaho, where in The locality of the next stanniferous find ever. The deposit is probably worthless, mportation of tin into the country. It did not,

aving been reached, this excitement anbeided. of tin stone in that State. The usual results td all Pikedom was excited over the discovery saults there ensued a collapse of the Owyhee ubble. Two years later came Missouri's turn,

is, however, immaterial, insamnoh as the sam-ples selected for assay averaged hardly more ban two per cent of metal, far too little to warrant the deposit being worked. With these

Tor the next 15 years the discovery of tim was monored in at least balf a cooperage of timerent states of the Union, Utsh, Montans, Virginis, New Hampshire and New Jersey being among the mombile of the polynomial of the person of the person

oreign stannary having been forced to susper perations by reason of these finds. etal as had been apprehended, not a single finning, almost every one of them. But there ollowed no each overproduction of this, useful

dere the deposits, it some of the accounts we save of them are to be credited, do not consist reatest revelation of tin of which we have any coord, that is, if even so much as one-half that has been reported concerning it may be believed. incovery was reserved for Dakota, where, at the base of Harney's peak in the Black Hills, soourred about the first of June, 1883, the But the overshadowing event in this line of

seays without number have been had, seeur-nees positive and profuse have been given, ensive reduction works have been put up, ate of this revealment, and yet, commercially peaking, no tin has been produced in Dakota. dore than four years have elapsed since the esaltus edd evoda gnirewed eto to nistano. long the beds of the creeks, nor yet of puny sins bidden away in the earth, but of a whole stream tin, particles of the metal scattered

one, but no tin, except in an experimental yey, has been made.

While recognizing the fact that the owners of mass Data the constraint of ed and guidlet to tunoma anoigiborq a bu

uce tin nor even explain why they have failed a do so, still it would gratify a natural curi-ity were they to give the reasons for such

the Mount Cory Co., has gone to Zacatecas, Mexico, to take charge of a 20-stamp mill, re-contly erected by the La Moria Mining Co. CHARLES DOBLER, for some time assayer of

river for irrigation in Placer county. Branch ditches will go out in every direction.

ditch will be 60 miles long and will water "Georgetown divide," in El Dorado county, and will then be taken across the American

being constructed by a large force of men. The

dle fork of the American river. A new ditch is

water, miners' measure, from the Rubicon river, above that stream's junction with the mid-

kers have secured a right to take 5000 inches of

rado county, and have made an offer for the California company's system of ditches and water rights in the same county. The Wall-

(New Proposed

{Mtdland,Mo. [1881]

REFERENCE, Old Wostern practices, in Mo.Ky,and Tenn,

the smelting process. sequence scaffolding, with its attendant evils and uncertain results, will be taken away from bility of adhesions being formed on the bosh or furnace walls is entirely avoided, and in con-

in the construction of the blast furnace, the lia-

ward inclination, so that they will freely de-liver the sticky and pasty materials to the in-

tirely and safely within the zone of complete fusion, and by giving the walls, immediately above the top of the bosh, an upward and in-

Lake merchants, Walker Bros., have purchased tion. This can be best accomplished by placing the Eairchild ditch and water right in El Do. the bosh or widest diameter of the furnace en-

AMERICAN CHARCOAL FURNACE.

0 01

10,01

0.1

AA INFORTANT PROJECT.—The wealthy Salt Isrly, and without any possibility of interrup

o deliver the pasty or sticky materials regu-

tion immediately above it should be arranged

complete fusion has been determined, that por

Walsh says: "When the limit of the zone of

forms. In speaking of the formation of salhe, Mr. sive material on the boshes or furnace walls, Mr.

He gives numbers of drawings, showing varions

eix feet at the boah and the widest 21 feet; the

tinct and individual designs. The narrowest is

while there are 670 blast furnaces in the United States, they probably represent some 500 dis-

In a paper on the "Irregularities of the Blast Furnace and a Practical Way to Avoid Them," read before the American Institute of Mining Engineers by Edward Walsh, Jr., he stated that while there are 670 blast furnaces in the Universe

Jeef is seven feet high and the tallest 86 feet.

In the engraving shown deneath the new

complete fusion. onnescent fuel contained within the zone of

the summit of the Snoqualmie pass. The road the completion of a survey of a branch road from Martin station, east of the Cascades, to Word Mines.—A dispatch from Tacoma, W. T., says: Principal Assistant Engineer S. S. Huson of the Morthern Pacific road reports

own language A shi wi tribe. He had only gained his knowledge of their habits and customs by adopting their dress and mode of

life, even becoming a member of the priest-hood of the bow, investigated the habits of the Zuni, or in their in 1879, which he accompanied, he had then

Referring to an expedition among the Pueblo

ause it is conducive to the greatest good to is this science superior to all other sciences,

fornis, and compared it to our Mariposa big trees, which are superior to all other trees, so

ethnology, which he considered composed of ethnology and archicology. He considered the science peculiarly adapted to succeed in Cali-

Cushing called attention to a new sapect of Cushing of Washington, the distinguished ethnologist, who is traveling under the aus-pices of the Smithsonian Institution, Mr.

Prof. Harkness introduced Professor Frank

lake, Inyo county, which act as an emetic, if

stout of some remarkable flies found in Juot8

There was also another donation from A. B. of not stones placed inside it, nutil the boneless head shrinks to the required size.

skin is cut round the base of the neck, and the entire covering of the skull removed in one piece. This is then dried gradually, by means

portions, of course, acquire too much prominence. To produce these ghastly objects, the

beonding, by which the victim's head as leading, by diplese to the eize of a moderately large orange, main-taining toleraby well all the teatures, only they diple to the needs and all the thicket of the needs.

they were prepared accompanied the heads: They (natives of the Rio Pastasse, Ecnador,) have a most perfect and finished method of

by the wife of Senator Seminarlo of Quaya-quil, Ecnador, through the kindness of Dr. Sharkey. The following description of how

graves in Ecuador. The latter were donated

Sciences, among other donations to the cabinet were two prepared human heads from Indian

If the boshes were lowered into the zone of complete fusion, as in the new design, such accumulations could not occur."

lodge. The seale is one-eighth inch to the foot. si ti enggh eta yd nwoan nosinagmoo eta ni ganialumnoos eseat enem mees ed oa nisig

short period, according to the extent of the fall,

cepting an occasional fall of dust, which, of

"Mr. Lee, president of the Midland Co., in-forms me that his furnace has worked well since that time and that it runs uniformly, ex-

this example with similarly, if not equally, of gray metal, requiring 85 to 95 bushels of charcoal followed charcoal per ton. The other furnaces followed this standard with similaries and the committee of the committee of

practice with a daily production of 35 to 45 tons

ing this form of shaft and for several years thereafter, Midland led the American charcoal

tapering cone for shaft. Immediately on adopt-

a ton of iron. It my memory does not fail me, Midland was the first to return to the rapidly

from 125 to 150 bushels of charcoal to produce

furnaces were built in the West on the same design. All of them, including Midland, worked very unsatisfactorily, as they required

About this same time (1781) several ones sint trook

the then successful coke practice, introduced the steep boshes and mearly oylindrical shaft.

to increase their yield largely, and the pro-jector of Midland, somewhat in conformity to

ately after the war is also shown. About the time that Midland was erected, the coke furnament in the vicinity of Pittaburgh commenced

At the last meeting of the Academy of Academy of Solences.

Indians in New Mexico, under Professor Baird

by saying that he was returning to the Zuni tribe to continue his researches, and on his return he hoped he would be allowed the Mr. Cushing concluded his interesting lecture

honor of again addressing them. On motion, a vote of thanks was passed to Professor Cush-ing for his admirable address,

design has been applied to the charcoal practics the aummit of the Snoqualmie pass. The road of the West, "Midland furnace is used for runs to the newly-discovered iron mines, and comparison, and the old furnace used immedi- its construction is to begin at once.

the greatest number.

Spiral turning is again to the front, and the methods of making it will bear a great amount of improving. The principle of about every making for will pear a great amount of improving. The principle of about every making for making to work holding, as it is often of alled, is to rotate the work in given earlied, is to rotate the work in given an angle with the axis of the work will stand at an expensive the cutter-head to slign with the spiral post and make a complete revolution in 10%, while she as complete revolution in 10%, which it cutter head to slign with the spiral as an allow the cutter-head to slign with the spiral as an about 32 degrees out of line with 10%. The both as a complete revolution in 10%, the beat a complete revolution in 10%, the beat as a cutter and the angle of the work, forms the beat to the cutter-spiral as a degrees out of line with the cutter-spiral as degrees out of line with the bergh of one trut, multiply the diameter of the work, forms the beat one to the work, forms the beat with the cutter-spiral as degrees out of line with the cutter spiral as a degree out of the work of

#### .ZaiatuT-booW

The property of the property o

We are always behind the times in regard to blease in regard to active of contrained to the contraint of the

#### Carved Ornaments.

MECHANIGAL PROGRESS.

PULVERIZED FUEL.—According to present respent need bean down 1 to 6 years.

POLYERIZED FUEL.—According to present respent needs at the Harrison Safety Boller Works begain receiving stetention. Experiments have been made at the Harrison Safety Boller Works at Philadelphia, Pa, with most gratifying results, a high efficiency having been secured from the strend it, is substantially the same as that of Messra, Whelphey & Storer, which was mader the subject of a series of Government trials a tame of the subject of a series of Government trials a case it is intended, we believe, to use coal refuse only insteaded, we believe, to use coal refuse only insteaded, we believe, to use coal respince of your and so the work of the work of the coal results of the results of the coal resort of pulverization, and so far the scheme was a copy of pulverization, and so far the scheme was a same arrangement is use of powdered to the furnace by an air jet, of was blown into the furnace by an air jet, and, according to the available accounts, the coal week of the was more expensive than the standard of the three subjects as the subject of the cost of provinces of and, according to the available accounts, the same arrangement is used in Theiladelphia. Kelling the subject of the sense of which the value of the same arrangement is used in Thiladelphia. The subject of the arrangement is and the subject to the new process are not been of which the value of the new process of which the value of the new process of which the value of the new process are not and the standard of the subject of the new process of which the value of the new process of which the value of the new process of which the value of the same transfer of the substitute.

The researches of Claude Bernard, who proved that censoroles of Claude Bernard, who proved that curare poisons the elements which terminate the ends of the motor nerves, leaving sensation intact, and abolishing movement alone, led him to lay down the principle of the abetomical elements. The individual organization of the elements of the organisms is as well marked as that of the organisms themselves. We may compare a plant or anitorial and the appulous city, the different members of which, each on his cown account, while practically and the schivity of exclange of the general prosperitorial and the schivity of exclange. In high organisms a special corporation in prosperity through the activity of exchange. In high organisms a special corporation in classic exclanges in the schim of these exclanges in the schim in the second classic exclanges. The blood globules are true traders, taking along in the liquid in which they awim the complex merchandles in which they awim the ends." produck.

The man who makes the best fertilizer, the pest baking powder or the best furtilizer, the nist best baking powder or the best furtilizer, the nist, is not straid of putting his formula on every package. The other with closed doors is in the dark. He will get left and never be missed.

The majority of rope-molding machines use a single outlet-head. The out is against the grain on half of the work, fix it as they may. This leaves it very rough. It is very hard work to amooth up after these machines. The confly true method is to use two cutters on the same arbor. Run them side by side, but in opposite directions, and they will out smooth and clean. American Oabinet-Maker.

Descroe Ou. As a Lubricant.—A correspondent of the English Mechanic writes as follows in
a recent issue: "The Asiatic writes as follows in
orty long ago used this oil in preference to any
other kind. Their dexterity is suprising; the
write for the Trichinopoly chains of gold and
aliver being like hair, and every good workman
draws his own. A man made mee plate for the
fine gauges from a flat rasp of English steel,
which I still possess. He drew copper, zinc
the castor-oil tree, thought on soften harsh
the castor-oil tree, thoo, are gathered, pruised not
the cheapest in India, is need to soften harsh
the astor-oil tree, thoo, are gathered, pruised
and rubbed in the hand, then stuffled tightly
into stiff European boots, male or female, and
oute all night; the leather then becomes
so remain all night; the leather then becomes
the sapple. For feeding large drills I like
this oil mixed with soft soap."

BUILT-UP TIMBERS.—The statement that a together, is stronger than a 12x12-inch beam, built ap of 2x12 planks piled together, is stronger than a 12x12-inch solid together, is stronger than a 12x12-inch solid together, is stronger than a sea excaedingly beaute the training a sheard. Every mill wright and carpenter knows that it is so, at least he has been taught to beaute that it is so, whether he ever tested it by exclusive that it is so, whether he ever tested it by each appropriate or not. The inexperienced will fail to see why a timber will be stronger than all proportions of the word have been separated aby a saw, and if this were the only thing principle that a chain is no stronger than its about it, it would not be stronger the old principle that a chain is no stronger than its about it, it would not be stronger than its like out it in competentiations of the grain, so that they will split old falsomally under a comparatively light load. It a built-up timber no large knot can weaken the beam except so much of it is a built-up timber in the part in turn and of one plank, and planks whose grain runs all stronger than of one plank, and planks whose grain runs all stronger planks, and planks whose grain runs all stronger than of one plank, and planks whose grain runs all stronger than a stronger the out will be braced and stronger than the outside cut will be braced and stronger the outside cut will be braced and stronger than a stronger the cut will be braced and and having the grain running in a different direction.

In the same way we find an arthorut injuring the other, and in a secociation.

These are not indissolubly united, they can diagrate an easoisted group, a society, in immessible from the main body and form new college, in viduals having a solitary and others an associated group, a society, in immedular and the main body and form new college. They can only a solitary and others an associated group we find some individuals carrying amaller ones on their outs and the mouth opens in the midet of the content of the corty of the mouth opens in the midet of the outer, as the body though they appears a fragment of the carry of the mouth opens in the midet of the content of the compose the young hydra, as is the case with the body tood is carried to one as taken a compose the young hydra, as is the case with the body tood is carried to one as taken be other, and vice versa. Detechment occurs when the body tood is carried to one as taken be such the they oung hydra bea strained a certific the mother they compose the young hydra beas strained as our an its progeny, these again bear arise by the other, and vice versa. Detechment occurs when the young hydra bas strained a certific to the the other, and by contractors ours when the body tood is carried to one as taken on the surved to retain its progeny, these again bear one so of tour different generations. This will bength of the reader to moderate a bydra the body tood and the savidate being normal arise, but very offers one of four different generations. This will be some digest, other sprough the three of one, generation the interest of the colony, a division of labor between the individuals of the lock, other sprouds, the individuals of the olony, specialization he is a careless way they soon become reciprocally in a careless way they soon become reciprocally in a careless way they soon become reciprocally in a careless way they soon become re INCREASE IN THE LEWOTH OF RAILS.—AMERICA.—AND INCREASE IN THE LEWOTH OF RAILS.—AND INCREASE IN THE LEWOTH OF RAILS.—AND INCREASE IN THE LEWOTH OF RAILS.—The gradual increase in the length of the rails for the 1850 is is probable that very laid down. Before 1850 is is probable that very laid down. Before 1850 is is country, and the langth had been laid down in this country, and the langth and leaves of the rails for which most of the new orders of the rails of the rails of the rails for them. The rail, like everything else controlled in the United States before 1855, and received with the rail of the

dead enough to be buried or burned, while the man who is up and coming with his methods, who this extended, which this expense and we, together with everytells us his way, and we, together with everytells us his way, and we to the which set him to thinking, and he improves his machine and be dody else, and the improves his mechine and product.

"THE FOUR ELEMENTS."—The evolution of obsos into earth, sir, fire and water can be represented in the following manner: In a narrow plais of one-fourth of its capacity; for the next fourth, of one-fourth of its capacity; for the next fourth, red. On an abaking this mixture together, you wine, tinted blue; and leatly, turpentine, inted on relating this mixture together, you will have a representation of chaos; but soon, on resting, the elements will separate them on resting, the elements will separate them the plue spirit air, the red turpentine fire, and the nectoury will represent earth, the closure of chaos; but soon, will have a represented will separate them. Are often taken for any water outs, and strict, and solony where are solved outs. Siphonophores. Are often taken for animals analogous to the meduca. They have a great variety and profit alon of parts, each part being the equivalent of a hydra or meduca.

Besides the nourishers we find individuals in the neighborhood of which are only reproducers, in the neighborhood of which are escual individuals resembling meduca in form, All these individuals are fixed upon a common axis, which thosts like a serpent upon the water,

in a careless way they soon become reciprocally necessary. In the necessary, In the series of seathers seven different individuation of seathers are necessary stated in the necessary of individuals of both sexes 6, helses. 7. Februaries, 6. Hepproducers of individuals of both sexes 6, helses, 7. Februaries, 6. Helses, 7. Februaries, 6. Helses, 7. Februaries, 6. Helses, 7. Februaries, 6. Helses, 7. Februaries, 7. Februar LYSECT REPRODUCTION.—Pethaps no more apparation of the wonderful representation of the wonderful repreducive power of certain insects could be given ducive power of certain insects could be given that that that contained in a work recently published by Theodore Wood, an English entonologist. It is assumed, first, than a single grain molegist. It is assumed, first, than a single grain weigh no more, collectedy, that four a single grain and second, that fourly a very stout man can weigh as much as 2,000,000 grains. Then it is found that if multiplication were entirely unsuch of a single application were entirely unsuch of a single application of the descending of a single application of the human point of actual matter, to more than 500,000,000 acty stout men, or one-third of the human population of the globe, supposing each person weigh 280 pounds.

BINGULAR ILLUSION OF VISION,—Attention bas been called by a Frence described to a curimary account for the apparent oscillation of the vision which it is thought one illusion of the vision which it is thought may account for the apparent oscillation or the swingling and called by the Germans "sternsohwanken." When the eye looks for some time at a small, feelly the Gody apparent to escillate or to describe certain curves. M. de Parvelle says that this is a phenomenon of the subject of the same nature as the movement of a star observed when a person leans this second as the movement of a star observed when a person leans his head the star apparent to be spitated in its place, and the star apparent to be spitated in its place, and the star apparent of a spitated in its place, and the star apparent of a spitated in its place, and the star apparent of a spitated in the star apparent of a spitated in the star apparent motion.

The sty should be clear. A lunette takes away the spitate should be one, and the styre and a spitated in the spitate apparent motion.

Elling the wester by tearing it to pieces. The poison may be pressed out of the sting with the fingers or a pair of forceps, when it is found to be a milky white fluid with a very pungent smell resembling that of formic soid. THE SCONFION'S STIME,—Professor A. G.,
Dourne has made a number of experiments on
three species of scorpions found at Madras, with
the object of determining whether the popular
notion that scorpions can commit suicide is true.
He finds that it is undoubtedly physically impossible for a scorpion to sting itself in a vulnerable place, and when one is placed in very
unpleasant circumstances, it not unfrequently
in quite powerless to kill the same indridual or
is quite powerless to kill the same indridual or
is quite powerless to kill the same socusi penetraanother of the same or even of another species.
Two scorpions, when fighting, repeatedly sting
one another with little is fany effect, the stronger
one another with little is fany effect, the stronger
one another with little is fany effect, the stronger
one another with little is fany effect, the stronger
sea another with little is fany effect, the stronger
one suchter with little is fany effect, the stronger
siling the weaker by tearing it to pieces. The

Ombines is prepared by continued.)

A NEW TEST FOR LEAD.—A solution of cochines is prepared by boiling the ordinary and commercial cochines I myster, filtering, and then adding sufficient strong abolool to insure its preservation from mold. A few drops of statement of the colution containing dissolved lead, ablus tings, according to the amount of lead plues tings, according to the amount of lead present. The test will distinctly indicate a strain fings, according to the amount of lead present. The test will distinctly indicate a tenth of a grain of lead, buy comparison with a solution tree from lead, by comparison with a solution tree from lead, by comparison with a solution tree from lead, more present of lead with a solution to contain the state of lime in carbonic soil ution of carbonate of lime in carbonic soil ution of carbonate of lime in carbonic soid lution of carbonate of lime in carbonic soid lution of carbonate of lime in carbonic soid of the same hardness as the water to be examined, and approximater coloring the sach and approximater coloring and or opper, for opper in very dilute coloring and or opper, for opper in very dilute tinged the water. The colore may now be coloring that or of the same hardness as the water to be examined, the slightest blue tink will be either an incity of the same hardness as the water to be examined, the same hardness as the water to be experiment, the same hardness or the usual colorometric printerity or the usual colorometric printerity of printerity of the same decent of carbonic printerity of printerity of the same and an or opper in the usual colorometric printerity of printerity of the same and may now be the usual colorometric printerity of printerity of the same and may now the usual colorometric printerity of the same decent or operation of ciples. As a qualitative test it is superior to be a ciples. The same and the summer of the usual colorometric printerity of the usual colorometric printerior of carboning or of experiments on the usual colorometric or of t

parts are in all respects too much like the hy-dras and medusæ for us to refuse them the obarsecter of individuals. The agaims and other siphonophors are true societies or colonies.

Oceanic hydrozos, showing the specialization of parts in the siphonophore, n, swimming bells; y, alimentary region; t, tentacles.



where it is sustained by an air-vessel forming its superior extremity. Two series of sterile meduses appear underneath this bell, a gang of same of physales) to which the colony abandons the care sof locomotion. These various

SCIENTIFIC PROGRESS.

[Written for the Press.]

Association.

Towner, the same animal, cells having different physiological properties assume different forms and contiguity does not modiffy them. According to Claude Bernard, we may kill all the cells of one kind without injuring the other.

USEFUL IMFORMATION.

Care of an Emery-Wheel,

The second of an Emery-Wheel, is a common oustom when an emery-woel is removed from its spindle to abuse it. Some harge it up on a mai, with one side expense it is to no on a mai, with one side expense it is to no on a mai, with one side expense the trup on a mai, with one side expense the trup on an uneven bearch, and others, against a demp ground and beach, one adge against the back of the back of

AMERICAN WORKNEN IN EDUCOFE.—The London of the N. Y. Workl, writing don correspondent of the N. Y. Workl, writing to that pept, asys there are large numbers of toolish Americans continually going to Europe to seek work. He says: "The fact cannot be too widely published that Europe is no place for American workingmen of any class. If they come over here with positions secured in advanced to proverty and claitrest. And if their places are to the said of airtrest. And if their places to poverty and claitrest. And if their places are lost, it seems almost impossible for them to poverty and claitrest. The competition in Europe anong the workingmen is so fiction, and to present a fact of the competition. He competition with those in the count of the competition with those in workingment and competition with those in would venture to come here without careful into won country, that it is hard to understand your own country, that it is hard to understand the while the immense tide of toreign immen that while the immense tide of toreign immen that while should teach American working men that while should teach American working in mean that while should teach American working mean that while should teach American working and seath and that we should be very cantions about exchanging a condition which is, perhaps, not all we could desire for one which is undoubtedly much worse.

Unexpected Explosions.

Persons in charge of poilers used for heating only cannot be too careful, as several cases have been reported which show that explosions can occur with a boiler coold and open. There are several cases on record where gas has accumulated in boilers, and the person in charge, on placing a lighted forch in or near the boilers, has produced an explosion that did damage.

GOOD MEALTH,

To Remove Sherherers' Marks,—As is well known, the removal of ahepherds' marks from the wool occasions great trouble. They are trequently cuts out with sheets. This, however, is difficult, costs which they remove these marks quickly by which they remove these and containing a sufficient quantity of watergales to 20 minutes in a bath heated to 104° Fahr, gas do containing a sufficient quantity of watergass to raise the solution to 2° B., and besides this four pounds of soap.

charge, on placing a lighted torch in or near the boilers, has produced an explosion that did boilers, has produced an explosion that did munge.

Several cases are reported where boilers have stood empty for a long time, with blow-off stood ones, with blow-off stood ones, with blow-off stood ones, and the boiler was filled with some gas, which, being carelessly ignited, produced an explosion of sufficient force to resemble a seam explosion, and do serious damage.

Another case: An engineer, to soften the scale in a boiler that was out of service, poured a few when ready to put the boiler in service, placed when ready to put the boiler in service, placed a light in it to observe its condition; the result when ready to put the boiler in service, placed a light of the light volatile gas, evapment and cuttle.

In the service for a time, be sure to accertain it there is minus hair and cuttle.

In all cases where a boiler has been out of service to a time, be sure to accretizin if there is a service for a time, be sure to accretizin if there of the interpretation of a time, be sure to accretizin if there are the service for a time, be sure to accretizin if there is any or a time, be sure to accretizin if there are the order of the interpretation of a time, be sure to accretizin if there are a commission of a time, but the search of a time, and the search of a time, and the search of a time, be sure to account and in the search of a time of a time, and the search of a time of a time, and the search of a time, and the search of a time of a time, and the search of th

Many serious accidents could have been voided by using the precautions we have menioned,—Steam and Gas Fitter,

better at something else. Thus they want to conside a money, and the sons that they are a considered at nothing. On Suoke in they tritter they are according to the they are the series of succeed at nothing. Others in the seath they are according to the the seath that the seath that they are a something they are a something they are a solid fall through ruinous habits, and the seath they are a solid them to the seath they are a solid they have a solid the seath they have not quantity to the seath they have a solid the seath they have a solid the seath they have a solid the seath they have not quantity to seath they have a solid the seath they have a solid the seath they are a solid they are a solid they are a solid they are a solid the seath they are a solid the seath they are a solid the are a solid the seath and they are a solid they are a solid the are a solid they are a solid they are a solid they are a solid the are a solid WHY MEN FAIL.—A cotemporary in dicusations the property of the destion says: "Few men come up to their highest messure of success. Some fail through timidity, or lack of nerve. They are fail through timidity, or lack of nerve. They are fail through test in venturing on ordinary duties. They lack pluck. Others fail through test in venturing on ordinary duties. They lack pluck. Others fail through and reservence. They build all castles, and venture beyond their depth, and and senture beyond their depth, and stall to Others, again, fail through less and want a change, thinking they can do much better at something else. Thus they begin waste time and morey, and they been better at something else. Thus they begin better at something else. Thus they begin better at something else. Thus they begin better at something else. Thus they hear of nuroh better at something else. Thus they begin better at something else. Thus they hear of nuroh better at something else. Thus they near the conony. Many and succeed at nothing. Others to be they have then thest of success they further and of the motives they have not qualified themselves for human hear and of the motives that extents in men. They have not qualified themselves for human occupation by practical education."

the strain, as the smaller the quantity used dissolved in concentrated nitric soid, and every a first many that the control of the control of

A Well-Grounded Complaint,

Reports have been made from time to time to the decreasing only of the decreasing output of only in the decreasing output of only in the decreasing output of only in some of the decreasing output of only in the factors of the decreasing output of the decreasing output of the decreasing of the decreasin

#### A Short Zine Assay Method.

bast a gram, as the smaller the quantity used the more rapid will be the work. The ore is The amount of ore taken should not exceed

is now firmly established, as several different looms have been invented in this country, improvements over those made in Europe, which are now successfully running in many different late now successfully running in many different caseabilishments on ear-east plush as well as-on cotton velvets with corduroy, which is but a cotton velvets with corduroy, which is but a several cetablishments now experimenting in limit, as it is a very suitable article tor corduroy alone in this country is practically without the table to it this country is practically without the table to it kindly. Cotton velvets and corduroys can be made very enterphy when the factor orduroys system of manufacture has been famoricanized, system of manufacture has been famoricanized, system of manufacture has been famoricanized, system of manufacture of manufacture. Day pared to furnish the information or skilled help required in their manufacture. Ex. one, and is not in account with the previously one, and is not in account of the subject of each of previously observed to the author, therefore, of much not be seen and the corporate into each of the compensation of fat into eager they bodies and pished by bringing together fatty bodies and plated by bringing together fatty bodies and settlement of this question, that sugar is formed settlement of this question, that sugar is formed settlement of the into the the profit of the great laboratory in which the food is onegan as the great laboratory in which the food to so he work and the producion of work and the great laboratory.

POISONIMO BY LOUGHT-REE BARK.—The insert bark of Review.

(Robinia pseudaccain) commonty outbrated as near bark of the fragrapt-flowered looner (Robinia pseudaccain) commonty outbrated as a ornamental tree, and for its invaluable time, but, has long been known to have a sweetish easte, resembling that of looning of 3% population of 3% populatio

hereged from the hospital in two days,

Yer-Poisoning,—A correspondent of Pop.

Sci. Acus writes: "I have always been externely succeptble to the poison for pulson it is succeptble to the poison of poison ity and oak so as to give me great annoyance, unless it is immediately checked on its first applies, and is succeptble to the second antible will be accomplease of the person of This poison of the person of the person

HTALAL HEALTHY.

THE CHART TO BECOME HARTY AND HEALTHY.—

Some good chings are beard man who complete states the elevated railroad oars, and the advice of a noted physician to a young man who complete chart who complete the chart of the elevated railroad oars, loss of vision, and the states and a poor appetite, the other moral seath and a poor a papetite, the other moral seath and a poor a papetite, the other cigarettes and a poor of them. "Though and poor of them." "Though of the condition is sample food by the condition of th Too Muoh Alk.—Many people are strangely affected by the lights air and foot) of affected by the lights air and foot) developed, and affected by the lights air and foot) developed, and affected by the lights are to be savefully waterdad. Women cut affected have to be extending waterd, and they feel the elects of the raced, and they feel the elects of the raced according to the care between the constant and the control of the care between the control of the care between the control of the care between the care between the care of the care of

HAPURITIES IN CITY AIR.—Prof. Tyndall has developed the fact, in his microscopic studies, that the slt of large towns and oities is silled above by the slt of large towns and oities is silled able to the slt of every inagin. The horse-cers and beavier teams grind the dust in the sir; there are also found disting with it dust and gasen contributed for sir is assily suspended in the sir; there are also found disting with it dust and gasen contributed by every industry, stoms of food, fine particles which abound wherever there is thrown off dusting the ingr of the inhabitants there is thrown off dust ingr of the inhabitants there is thrown off dust of cotton, linen, velvet, fur, wool, etc. All these and countlies other products dast in the atmosphere of all large oities. Surely, it is not difficult to understand why a residence in the country promises better health and a longer lease of life.

INOREASE IN THE DURATION OF HUMAN LIFE.

"Only 50 years ago," says Sir Spencer
I Wells, "the average duration of human life in
Great Britain was 30 years, to years the scoreding
to estitistics, it is 49 years. In 50 years the
population has increased by eight millions of the second was to work may be put
according to the second s

#### MINING SUMMARY.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

CALIFORNIA.

EVERYING REEK.—Cor. Amador Ledgev, Nov. 5: Deverything about the Wolfdame is being pushed to completion as rapidly as possible. A heavy force of the works, and according to four weeks. Work at the North Star mine is properly of the works, and according to greated english collect in the safet by contract, and three species of the safet by contract, and the species of the safet by contract, and have been contracted and the safet by contract, and have been contracted to the safet few days, it is probable been contracted to the safet few days, it is probable to the safet sa

trial is to be made, and the result will be awaited with interest.

\*\*Oalsward, Nov. 17: The want of wasted with interest.

\*\*Aucels.\*\*—Cor. \*\*Reovd.\*\* Nov. 17: The want of wasted with interiest of the key fairering show in the key fairering show in the key of the key fairering show in the key of the key of

MORE STAMPS,—Georgetown Gazette, Nov. 5:

The additional to stamps at the Josephine mine at Volcanvellle will soon be in tunning order, and the mill will be started up as soon as there is sufficient water. We believe Volcanoville will soon opening in that section for those who wish to engage in mining. El Dorado.

Movada. Movada. Movada. Movada. Movada. Movada. Movada. Twenty tons of quarts taken from the south drift of the Nevada county mine, has just been crushed up the Nevada county mine, has just been crushed up at the constancy sat mode to the Movada county, and it welcome news to all their thends. It being then then then then the shout stood, or at the rate of \$50 per ton. This is by the procuraging to the owners of the Nevada pipult sand is welcome news to all their thends. It is flought that the shoot of tock worked some year soon, as the tunnel is being driven toward it. This ledge are of the opinion that the original workers shoot was immensely tothe and the original workers of the opinion that the original workers ledge are of the opinion that the original workers and the original workers of the opinion that the original workers and the original workers of the opinion of it. At present the superintendence of David Hutchinson, under the superintendence of David Hutchinson, under the superintendence of David Hutchinson, or onsidered one of the best miners in the considered one of the best miners in the contract of the the considered one of the best miners in the contract of the considered one of the best miners in the contract of the considered one of the best miners in the contract of the considered one of the best miners in the contract of the considered one of the best miners in the contract of the miners in the contract of the considered one of the best miners in the contract of the considered one of the best miners in the contract of the miners in the contract of the considered one of the best miners in the contract of the miners in the contract of the considered one of the pest miners in the contract of the miners in the contract of the miners in the contract of the considered one of the miners of th

The Cray Eagle, or old Hawk-eye mine; by Order Strings, and Orders Hill.—Cor. Placer Heroid, Nov. 5: Placer Heroid

THE CENTENNIAL MILL.—Greedville Bulletin, Nov. 2: The Centennial mill, in Genesce Valley, Nov. 2: The Centennial mill, in Genesce Valley, Monday, and it is reported to work smoothly. Rich Strukte Revorted. G. Maxwell, who was in Greenville Friday, informed the Bulletin was in Greenville Friday, informed the Bulletin was in Greenville Friday, informed the Bulletin of German a lew days ago, about a mile west of butter. If yalley. The ore is reported to be fabrilously rich, the discoverer claiming that it will assay stoo per ton. The ledge is about three feet wide.

Plumaș.

MILL BURNED.—Tuolumne, Independent, Nov. 5:

We are sorry to learn that the Chimisal mill, below
We are sorry to learn that the Chimisal mill, below
Tultielown, was destroyed by the on Sunday morning. The mill was a new one, of three stamps, and
had just been completed by the Sonors Foundry
day night the doctor shut down, baving cruebed
day night the doctor shut down, baving cruebed
day, between 3 and 4 o'clock the doctor was aroused
by some roise, and got up to see what it was, when
be bebeld his little mill in one mass of flames. Uppo on examination, it was found that the battery had
been cleaned up, and the dies taken out of the battery and piled up on each other; but not content

Tuolumne. ledge.

The TRINITY GRAVEL BED.—Shasts Courter, Joves, S. Though no great excitement has to lollowed discovery of paying gravel on the Trinity, yet there discovery of paying gravel on the Trinity, yet there discovery of paying gravel on the Trinity, yet there is seen that discovery of paying gravel on the Trinity, yet there is seen that the paying gravel of the gravel of the traced from Gold Bluff clear raised river-bed can be traced from Gold Bluff clear raised river-bed can be traced from Gold Bluff clear is the parties who are posted that this uptained by parties who are posted that this to the Westerverlibe from the fact that most of them lie from 600 and from the fact that most of them lie from 600 and from the fact that most of the fact in this receivable only come through co-operation, or at the bades of lollows that in the majority of cases it will require follows that in the majority of cases it will require only come through co-operation, or at the bades of the come function which can many valuable mines in the county tributary to the Sacramento and San Josquin, by the hydraulic many valuable mines in the country tributary to the Cabric and the fact of the diverse of the majority of the diverse of the diver

A Good Properry.—Mr. Jonathan Smith, one of the former owners of the Bananza mine in Mince of the former owners of the Bananza mine in Mince everylle, we are in town the first of the week and toformer owners of the mine, are doing consider as the trick & Davis and F. Grotelend, who have bonded two-thirds of the mine, are doing consider is being enected and a wheel to run a pump for the purpose of the ledge is being constructed. The pump will arrive from the city next week. The for the pump will arrive from the city next week. The for the pump will arrive from the city next week. The state pump of the shalf, for the pump will arrive from the city next week. The state of the shalf, for the pump will arrive from the city next week. The shalf in the weak will next July to redeem the bonded and in the meantime will thoroughly prospect the deeper of the pump of th

THE EMTERPRISE.—Charles Lobdell came in this count in the Forestrate. The EMTERPRISE.—Charles Lobdell came in this reports from the Enterprise mine at East Fork and resports favorably. The company is not rushing work at present, but they keep the strastra running with light darge, constaintly, and are taking out good one. They endeavor to keep all work advancing, running tunnels to drain the mine, and thus be prepared for the winter.

A GOOD PROPERTY.—Mr. Jonathan Smith, one

HAY FORK MINES, —Journal, Nov. 5: From C. C. Shattuck, we learn that he is meeting with good success in the Magdalina quartz mine. He is success in the Magdalina quartz mine. He is sucking to an atz-inch ledge, which is paying satisfactorily. He is working two shifts of 1x men and is prospecifing to some extent on the Cyclone, but is not working a large force of men on that property. The mill is not un on full time owning to the fact is an owning a large force of men on that property done prevents them from extracting sufficient ore for that purposes.

The ENTERPRISE.—Charles Lobdell came in this The ENTERPRISE.—Charles Lobdell came in this

Trinity.

road, and pay gravel is expected very sconning and the treatment of the training and a speak of the county, was at Henley Tuesday inspecting the California Queen quarte mine, which is to be reopened by Mr. Daggeot man account of the most valuable in the county, be a one of the most valuable in the county, it gains a more the most valuable in the county, it gains a more the which paid \$55 per ton. Upward of \$55,000 was and at the time it was shall process of its development of the time and the process of its development of the mine and squires, on Indian creek, continue to find endounging the contraining and squires, on Indian creek, continue to find ensuring a shall stain good was been exhausted, but the street of the company \$86x. The Black Beat mill is selled to the contraining of water, but will be contrained to the contraining of water, but all is active the sandle box at Scott and of selected rock, shipped to San Francisco, and the company \$86x. The Black Beat mill is activity of the company \$86x. The Black Beat mill is actively the company \$86x. The Black Beat mill is a string on the company \$86x. The Black Beat mill is activity of the company \$86x. The Black Beat mill is \$80x and \$80x and

SIERRA MEVADA.—The south drift on the 520 level is in a 6194 and porphyry formation.
MEXICAN.—They pase stated a west crosscut 100 feet north of the south line.

## RUNNING ON ORE.—Belmont Courier, Nov. 6: The Monitor-Belmont mill is running steadily on a few days Mr. J. E. Severance, the lessee, will know whether the ore from the Barcelona can be Belmont District.

porphyry. Portost.—The 300 and 450 levels are being surp-ped by lateral drifts from the Sharon shaft.

and Vivian mills were required by the Crown Foint and Belcher on Movember 1.

HAYWOOD,—There are 18 men employed in the tunine and they take out 20 tons of ore daily from the tunnel and wines, which is down about 160 feet from the tunnel level.

Brown & Leckurts—About 20 tons of ore daily wine the boisted. It comes from their couthwest drift, are employed.

Brown in the shalt about 50 feet. Fifteen men of the fact of the mine, which is down in the shalt shout 50 feet. Fifteen men of the fact of the mine, which is in the deepest workings of the mine, which is in the deepest workings of the mine, which is in the deepest workings of the mine, which is in the deepest workings of the mine, which is in litigation are about settled, and it is expected that about 20 feet from the surface.

Andre, and the work of the face is in porphyty in the vehr. There are about raco tons of ore on the particle formation.

JUSTICE.—There are about raco tons of ore on the favorably.

BEST AND BELCHER.—The wince on the 1300 flowed and 1500 flowed

dump.

YELLOW JACKET.—The daily shipments have seen cut, cown to about 320 tons, as the Santiago and Vivian mills were required by the Crown Point and Belcher on Movember 1.

OCCIDENTAL.—From the station in the north in-cline wince a north drift is advanced a total distance of 60 feet. They are now extracting ore. They have over 500 tons of fair milling grade ore on the dump.

ALTA.—There are over 1000 tons of \$70 ôre on the dump. Ore has been opened in three different places from the 1150 to the 700 levels, and they are now extracting ore from the ,Keystone vein on the 750 level.

BORK TO I RIGHT RESONATE, WHEN THE BORK TO THE REPORT COUNTY—The GOD-level could drift bas been cleaned out and timbered 47 feet, the total distance from the shaft being sty feet. The four tunnel fairli st now in 850 leet, and during the past week affor it as policy feet of it, about 70 feet below the 22s level. After the 52s level about 70 feet below the 22s level. After the 52s level and 10 feet bad about 70 feet below the 22s level and 11 be bad to drain all the water on the 22s level and allow it to care the 12st below the 22st by 11 feet bad 12st by 12st

ING WEEK, TESCHER,—Since the last report the 1300-level raise has been advanced so feel; lotal raise, 34 feet in one, and they are in low-grade quartz. It is the intention to continue the upraise or its present course. The good ore mentioned in former reports is again being followed, as they came back to it after reaching the hanging—wall. CROWY POLINY.—The coo-level south drift has been CROWY POLINY.—The coo-level south drift has been

HALE AND MORCEOSS,—On the 700 level the West crosscut on the southern boundary line has gives low assays. In the north drift on this level they have put in eight square sets of timbers, and they have put in eight square sets of timbers, and they have put in eight square sets of timbers, and north drift was advanced 25 feet. They will start north drift was advanced 25 feet. They will start in the week.

GOULD AND CURRY.—On the 900 level the south diff from west crosscut Mo. 2 has been advanced drift from west crosscut Mo. 2 has been advanced for first they have started an uprestee, which is now up so feet. The top is in quartz giving low assays. They have cleaned out the scycleved drift and are extending it to the north. The face is now in a small streak of our flower.

defining the work, and simpled dop four on the definite the work and simpled dop four of LL.—VA.—A larger force of men is at work in the stopes than formerly. A great deal of preparations of ore when all their malls are running at full espacinty. The charge from steam to water power at the Everything that was expected and calculated to be accomplished by the system of transmission of energy. Everything that was expected and calculated to be accomplished by the system of transmission of energy, which has been put in, has been realized. It matches right up to every requirement.

CHOLLAR.—Fair-looking quarks is showing in the bottom of the Sharon shaft, which is peing sunk to connect with the Chollar shaft west drift on the 650 bottom of the Sharon shaft, which is peing sunk to connect with the Chollar shaft west drift on the 650 leaves of the Logan process, and the devel. The work of the Logan process, and the seventh as according to the Logan process, and the few days more to finish.

GOULD AND CURRY.—On the gool level the south dult thom west crosscent Log here advanced diff from west crosscent Log here advanced the constant Log here.

Die tace is in porphyry and a little clay,

NAVAGE.—On the 600 level they are extending
the main south drift, and are extracting ore at the
the main south drift, and are extracting ore at the
they also level they are extracting ore from both sides
they yoo level they are extracting ore from both sides
of the wince on this level. On the 50 level they
No. I west crossent on this level shows a feet of highgrade ore, and they have commenced putting in
grade ore, and they have commence extracting ore
level they have finished the working station at the
level they have finished the working station at the
tom this level. They have hoisted 494 tons of ore
during the week, and shipped 464 tons to the Mexiduring the week, and shipped 464 tons to the Mexi-

UAAH.—Virginia Enterprise, Nov. 5: The north drift from west crosscat No. 5 extended 49 feet. The face is in porphyry and a little clay. Washoe District.

with robbing the old man, the scoundrels set fire to the mill and decambed. We learn that a rich surke base been made at the Big Basin mine, of which Mr, James Hamilton is superintendent.

The Clayton smelter has just started up for a short about the same time, and about 30 feet to the morth to close the season's work. Work at the Ella of it, running in the same direction. Shipment of mine at Clayton will be earried on during the win- ore continues.

KELLY.—Socorro Bullion, Nov. 5: From So to 75 tons of ore are being taken out of the Kelly mine of ones of ore are being taken out of the Kelly mine showing for the old played-out mine. The Graphic's showing for the old played-out mine. The Graphic's above the old average in quality. The Ida Hill short is twice its usual amount of ore, which is far about the leaf shipment of ore on bunday. The free made its first shipment of ore on bunday. The free made its first shipment of ore on bunday. The free more the lead is struck it will be ranked among the big mines of New Mexico.

GEVIEW.—Sait Lake Tythune, Nov. 4; The recipite of the metals in this city for the week ending Movember 3d, inclusive, were \$95,676.94 in ore, and Movember 3d, inclusive, were \$95,676.94 in ore, and \$767,227.90 in bullion, a total of \$1625,927.05 in bullion, a total of \$1523,929 cit.

The Ontario product for the week was 15,038 cit. The Week was 15,038 cit. The Ontario product for the week was 15,036 cit. For the week, as approximate total of \$241.95.15. For the week, as approximate total of \$241.95.15. For the week, as approximate total of \$241.95.15. For the week, the proximate total of \$241.95.15. For the week, the proximate total of \$247.95.15. For the week, the office and office the value of the value of \$457.95. at otal approximate value of the value of \$457.95. at otal approximate value of the value of \$456.95.

Sold ore to the value of \$457.55. in bullion; the Gerral of \$250.000 by Wells, Page of \$250.000 by \$250.0

GRAVE CREEK.—Rogue River Convier, Nov., 19.

Lower Grave, Creek, Styler Convier, 19.

Lower Grave, Creek, Styler Creek, Styler Convier, 19.

Lower Grave, Creek, Styler Creek, Styler Convier, 19.

Lower Grave, Creek, Styler Creek, Style OREGON. NEW MEXICO.

Informa mine, Atlants district, was received at the sampler during the week.

IT ALWAYS PAYS.—Idaho Avalantie, Nov. 5;

The recent crushing from the Empire State demonstrates in the form that the owner, but is defeat that there is plently of money yet but is dear the council of Florida mountain, and that the owner, but it as as property that is bound to place him in easy oftenusiances. Forty-three and one half tons of ore, recently milled at the arrastra of the builton being worth over \$8 per ounce, making the leasees, Mesars, Peter and John Donnelly, Billy Make, John Hearndon and Barney Mattison, as well as the owner of the mine, feel happy. The well as the owner of the mine, feel happy. The October next. The Empire State is no new mine; October next. The Empire State is no new mine; to come.

ORE.—Elk Mountain Peilot, Nov. 5: Colin Timmons and Frank Ferry were in town this week.

They are shipping a carload of ore from the Crown mine, situated in Crystal beain. Frank Smith came down from Byars basin last Monday and reports that from the Monitor lode for the wine from the Monitor lode for the wine from the Monitor lode for the wine from the Monitor lode for over 200 feet which will cut the vein in the Merriporate of cert and Chitaqua lode. He has about two carbonar and Chitaqua lode. He has should make any sipherents this year. The May contact group of shipments this year. The May contact group of shipments this year. The May contact group of chitage of or on the dump, but will not make any allowed the state of the contact group of the state of the contact group of the state of the contact group of the state of the contact from the part, but and the contact and has year. The make the state of the contact of the reacon that her win mine in Irwin, we understand that Alex Fraser and others, who were given it up. We do not know the cause, but have given it up. We do not know the cause, but in the vein we should not deem nate in Irwin, wein is liable to have that, when no feet or possibly vein is liable to have that, when no feet or possibly vein is liable to have that, when no feet or possibly vein is liable to have that, when no feet or possibly vein is liable to have though into good ore. .ANATMOM

one. Many other claims in the neguenchous of when mentioned are showing up well, and their with the mentioned are showing up well, and their with the mentioned are showing up well, and they winter.

Nevato That well-thrown gold placer develoat on the beginning the state Lodge county, is about to be developed by a company that has been formed for Mov. 4: That well-thrown gold placer developed by a company that has been formed for the property of the state o ANACOKDA,—Cor, Butte Miner, Nov. 2: The amow, which a week since necessitated the laying off of a number of men at the Anaconda, Co.'s new works, has disappeared and a larger loree than 50 for its now men when the sheady enormous plant not it in the confidence of the sheady enormous plant to large this addition to the already enormous plant in running order before winter sets in., About 50 work laying the 60 and 40 inch pipes which are of more were brought down from Butte this morning by Work laying the 60 and 40 inch pipes which are to work laying the 60 and 40 inch pipes which are to connect the two large flumes at the old amelier with the owners to works, the Modoc, Wake-Up Jim and other town, it is tandershood that on the completion of these works, the Modoc, Wake-Up Jim and other will be suffer beer of the reduction of their ores, which of the Bluer-byed Wellie contemplate putting up a mine confirmer in the reduction of their ores, which its later breight of percentage of lead, which it is later breight of the reduction of their ores, which of the Bluer-byed Wellie contemplate putting up a mine on the breight of their ores, which for the purchase of hoising machinery tor their mines is later or the reduction of their ores, which of the burden seasy treatment. The property under the development of the Wellier of the development of the two mentioned are showing up well, and their whites.

Meynan Greek, There and their whites are making arrangements to work them all winters.

New All Wellier will be supply the well, and their whites are making arrangements to work them all winters.

MUTUAL.—Black Hills Plonest, Nov. 8: Confination of reported developments on the Mutual by which a large and valuable or the Ordinaria of the Mutual by which a large and valuable or the Ordinaria of the Mutual by which a large and valuable or the ordinaria of the confination of the Library of the Library of the Library of the Cartest form which the Iron Hill shafts were sunk, demonstrates that there are two contacts in the Cartest forms of the carte of the carte of the cartest of the camp where valuable version of the cartest of the camp were decovered in the Mutual is below the black lime of the camp were decovered in the Mutual is below in the Iron Hill state importance to the camp.

FLOAT.—Latest reports from the Iron Hill state that its of a solid body of ore more than two feet in the curber of the camp. Hill will have three days the Iron on ore, at its property in Carbonarie. Two are to persist on ore, at the complication the confine with the Enterprise on ore, at the property in Carbonarie. Two ore set the real one of the camp on ore, at the property in Carbonarie. Two are now test on the property of the camp in placed and the property. Twenty-five tone of Bulli, its one ore, at the property in Carbonarie. Two operation ore were transferred from the mine to the bind upon ore, at the property in Carbonarie. Two operation ore were transferred from the mine to the property of the property of the camp of the

DAKOTA.

IDAHO.

MOTES.—Prescott Courtey, Nov. 5: John S. John

Tuesearore District.

Bull.100,—Elko [Ness. Nov. 5; Tuesday's Tuestatora stage brought down up bar of Vorth Belle Isle bullion, weighing 1569 pounds, and valued as 45,000 in silver and \$4,000 in Rold. This was at \$50,000 in silver and \$4,000 in Rold. This was at \$50,000 in silver and \$4,000 in Rold. This was the number of the the mining boom of the upper level. Regular ship ments will, and shows that there is genuine merit in ments will hereafter be made twice a month from ments will hereafter be made twice a month from one for the part see prople confidence in the mines of the part see people confidence in the mines of Tuesarora.

Whild Rose District,—Chieve State, Nov. 8: The One professions of the part see in west washes, the change to note in the stopes in west two feet more ore—it is now eight feet between washes. Weather dry and mild, noads good and washes the cuty and the stopes in west two feet more ore—it is now eight feet between every fine or ore—it is now eight feet between everything tunning smoothly.

ARIZONA.

vested, naturally looks before he leaps,

LOOKING BETTER,—Belmont Couvier, Nov. 5:

LOOKING BETTER,—Belmont A. While in Belmont this week, Supt. T. A. Oliver inlormed us that the Chicago M. & R. Co.'s mine in
Ophit canyon is looking better and better as the
Ophit canyon is looking better and better as the
awork of development progresses. Dritting on the
too level north is pushed vigorously, and the showtoo level north is level is immense. Mr. Oliver
to de north is pushed vigorously, and the show
the indications point to the uncovering of
the uplying the indications point to the uncovering of
the uplying the county. He believes
covered in that section of Mye county. He believes
covered in that section of Mye county. He believes
that the bullion shipment from Ophit canyon will
be large and regular during this fall and winter.

Turesaron Bullion shipment from Ophit canyon will
be large and regular during this fall and winter.

Turesaron Blutton,—Elke fives Press, Nov. 5: Tuesday's
and the pushed the county.

Assence ORE BODIES, And Frester & Holmor, 7 (one.)

JARGE ORE BODIES,—Audin Keveillie, Nov. 4; Me learn from a reliable source that the mines sitution of the bodies and ore being opened. A being opened. The bodies are being opened by the original being from the being bone at present openings show a stope of about too feet in hight and being being the being bei

Galena District.
Ore Bodies.—Austin Reveille, Nov.

ORE SHIPMENTS.—Bureka Stathind, Nov. 5:

During the past week ore shipments were made from the mines of the district to the Stibmond works—Durides prince, 39 tons; Hamburg, 93 tons; Maring, 10 tons; Burgene N. Robbrers, 83 tons; DeWitt, 5 tons; Burgene N. Robbrers, 10 tons; Hamburg, 10 tons; 10 tons

CANDELARIA.—Esmeralda Meur, Now, 5; Since CANDELARIA.—Esmeralda Meur, Now, 6; Since comporary closing down for repairs of the machinery on the Mt. Diablo mine, it was supposed machinery on the Mt. Diablo mine, it was supposed and vicinity; this, however, is not so. The Georgene and vicinity; this, however, is not so. The Georgene and vicinity; this, however, is not so. The Georgene smill, which has been idle for some time, reaumed its form into ores of mill, which has been idle for some original course are exceeded. The prosp colors and owners of mines are extending precious metals from the ores of claims, expecting a turn of good luck, which the present into the metals amount of assessment work required by law, these mines though confidence and district, and why they are overlooked remains a mystery to the average miner.

Columbus District.

profitably worked in this mill or not. Should the Mr. Holland has by result of the run prove satisfactory, the mill will be he finally dropped of kept trunning for an indefinite time.

The Clayton smelter has just started up for a short into to clayton smelter has just started up for a short into a cleek the escason's work. Work at the Ellia mine at Clayton will be castred on during the wintown of high-grade one. The new concentrating works at Bayhones have just been completed, and from all classifications promise to be a valuable improvement. Owing to high water last spring, the sweeping away of bridges and destruction of roads in the district. On the mines, but indications are favorable door of the dime during the summer to repair, comparatively little work has been done on the mines, but indications are favorable for extensive developments near year. The placer daining the season, The Rellel mine to Broadford as shipping one to on the mines, but make to be the start year. The placer daining to one heat levels mine, and my basing work hall work have been supplied from the mine, and now having a supplied from the mine, and my will work the property during the writter months. Michael bream has a bood cleanup. The Clayton Cosen targe and now having a supplied from the mine, and months, Monday by Mike Johnson's pack train. The start of the Sansbron Cost start of the Sansbron and Monday by Mike Johnson's pack train. The start of the season of concentrates from the sampler during the week.

The tecent crashing the week, and strained as the same time to the season of concentrates from the sampler during the week.

The recent crashing the week and strain the season of concentrates from the sampler during the week.

The recent crashing they mine splean as the strain of the same prine of some or co

drive it.

Stocktron Hill,—Mohave Minter, Nov. 5:

Altining matters continue quiet, but this may be accounted for, as this is the season for the annual assessment work, and many of those who have claims and do not believe in doing their work on the first and do not believe in doing their work on the first in the bills swinging the piek these warm, ballmy days. The C. O. D. is looking better than ever, Abl the different workings show good bodies of ore, and we can soon chronicle regular shipments. About 35 men are employed in the mine and works. About 35 men are employed in the mine and works. A contract has been detected when it to drive 5 of tert from the fire junction of the Tiger and Cupel veins, and great the juncation of the Tiger and Cupel veins, and great the juncation of the Tiger and Cupel veins, and great the juncation of the Tiger and Cupel veins, and great the juncation of the Tiger and Cupel veins, and great the juncation of the Tiger and Cupel veins, and great which yielded such rich retraches the ore chuuc which yielded such rich retraches the ore chuuc which yielded such rich retraches the ore chuuc. THE KENDAL BATTERIES must be seen to be appreciated. They deceive their looks, and the most most unus admit they are absed of stamps for medium bard quartt, at any rate, They started off medium bard quartt, at any rate, They started off as pretty as a quarter horse, do their work smoothly, as a quarter horse, do their work smoothly, and stee they as a stamp batteries cometimes indulge in. Their discharge is bettered sometimes indulge in. Their discharge is bettered sometimes indulge in. Their discharge is the sample. The main their oost is not one-fourth that of the stamps. The main their convincing proof of their best short in more in good of their discharge in good outbeart into as fast as men and dynamite can drive it.

Mr. Holland has been working for years upon them; be finally dropped complicated and intricate methods and sufficient reasons for keeping secret their construction for the present, but they will undoubtedly be in the best and largest mills on the coast in a short time.

MINING AND SCIENTIFIC PRESS.

## GREGORY &

San Francisco, Cal.

Cor. Fremont and Mission Sts.,

INFORTERS AND DEALERS IN ALL CLA: SES OF

# MACHINERY

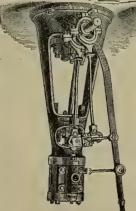
NAVNE'S VERTICAL AND HORI-VAD BOITEES. VILVS ENGINE WORKS ENGINES ENGINES' BEOS, HOIZLING

EMPIRE LAUNDRY MACHINERY, OLLO SITENL GVS ENGINES'

TAUITE CO.'S EMERY,
AND MACHINERY, UDSON ENGINE COLERNORS. PICKERING ENGINE GOVERNORS

ROBLING INTECTORS AND ETEC-NATHAN AND DREYFUS OILERS.

ING' PAINT, ETC. TVNE VND BODIEK SVM WIFTS" ING CO'S EUBBER GOODS, DISSION'S CIRCULAR SAWS.



MACHINERY, WOODWORKING

EERIN BVND SVM BLADES. WEBBER CENTRIFUGAL PUMPS. BLAKE'S IMPROVED STRAM BICKEOKD'S POWER DRILLS, BEMEUT & SON'S MACHINISTS CHINISIS, LOOFS. NEW HAVEN MANUE,G CO.'S MA-MACHINERY, WOODWORKING

SCHPENKER'S BOLT CUTTERS. BRADLEY CUSHIOUED HAMMERS. TURBINE WATER WHEELS, BEVINVED MITTING MYCHINES SHIMER MATCHER HEADS. STURTEVANT BLOWERS AND

#### YACHT ENGINES.

## **ENCINES** Sug BOILERS

FROM 2 TO 100 H. P., ALWAYS IN STOCK

#### OIF2 AND LUBRICATING **WILL SUPPLIES**

## LIFE-SAVING RESPIRATOR

Entirely Prevents Lead Poisoning

and Salivation.

The most periest appliance for people engaged in Sameling. Dry Curabing, Gunno Works, Ornicksilver Nines, Lead Corroding, Throshions who was a stock-driving has been decomparable and succession of the comparable and similar where there is dust, poisoness vepor, or bad dots and similar where there is dust, poisoness vepor, or bad dots and similar works, they are indispenses less are dispenses, and succession are dispensed as a cold subject is approval after trial, and if not schisted as the dozen. Sont post-paid to any address on receipt of prices. The communications and orders to LOHM TANIOR, & CO., Sole Agents, 114 to 118 Fine St., Sole Agents, Sole Agent, Sole Agent

Send for Descriptive Circulars containing Testi-monials of well-known parties who are at present using



## THE GIANT POWDER COMPANY

The Salest and Strongest High Explosives in the Market.

CIVIL DOWDER OF DYNAMITE,

Of Different Strengths as Required.

GELATINE-DYNAMITE, Stronger than Dynamite and even Safer in Handling.

10DSON POWDER IMPROVED.

FOR RAILROADS AND LAND OLERARING. Is from three to four times stronger than ordinary Blastsge Powder, and is used by all the fashirodes and dravel Claims, as it breaks more ground, pulverises better and
sves time and money. It is as dry as the ordinary Blasting Powder and runs as freely.

GENERAL AGENTS, SAN FRANCISCO CAL. Owns and Fusk for Sale,

BANDMANN, NIELSEN & CO.,

## MINCHEZLEB HONZE

44 Third Street, San Francisco, Cal.

This Fire-proof Brick Building is centrally located, in the freshiese part of the city, only a half block from the Grand and Palace Hotels, and close to all Steamboat and Ealfroad Offices.

Terms, Board and Room, \$1.00 per Day 🍵 Laundry Free for the use of Families ann cold barns arres.

ROOMS WITH OR WITHOUT BOARD.

TREE COACH TO THE HOUSE

J. POOLEY.

DOMNIE B. I. P. CO.

In use on the PREVENTIVE AND REMOVER

BOILER SCALE

DOWNIE EUCALYPTUS

U. S. Navy,
Pacific Coast S. S. Co.,
Market St. Cable Railway,

HOOKER & LAWRENCE, General Agents,

EHIZBEE-FICOL WIFF COME, X'

BLAST AND SCREEN MILLS.

All substances when ground leave the mill in a finished state—no regrinding being necessary. Automatic Feed. Wearing parts of Steel and Forged Iron.

most rapidly and economically,

Mineral Substances to any required degree of fineness

For Reducing Gres, Quartz, Phosphate and Gement Rock, and other

CENTRIFUGAL ROLLER

34 and 36 FREMONT STREET,

**EEISBEE-LUCOP** 

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc.

TATUM & BOWEN Several Mills are now in the mines doing excellent work. The ''Economic" is not only a mill for small mines, but we believe it is destined to supersent the old stant in mills of the latesest capacity.

ROCK Breaker Goes with each Mill. We also have a suitable

We have here the Seamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the rapidity (300 strokes each per minute) with which they run. There are 4 shoes in each stamp, so that there are 4500 strokes of the shoes no ruhe dies per minute. Less power is required than in any other mill to do the same smount of work.

The Mortar has screens at both ends, giving ample discharge. There are no cams or tappaped to the stamps adjust themselves as the shoes wear.

DOORFE "ECONOMIC" STAMP MILL

AUTOMATIC ORE

SAN FRANCISCO, CAL.

And 461 Howard St., San Francisco, where a Mill can be seen in operation and oreswill be reduced at reasonable rates, 145 BROADWAY, NEW YORK Standard Oil Company, Cal, Sugar Refinery, Etc.

SEND FOR CATALOGUES. NARKET ST., " SEN FRANCISCO.

## Metallurgy and Ores.

#### SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, .... MANUPAOTURRING OP....

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

## JOHN TAYLOR & CO...

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GISLS, GLASSWARE AND SUUDRIES, ETC CHEMICAL APPRATUS AND CHEMICALS,

114-118 Fine Street, - San Francisc We would call the attention of Assayors, Chemis Minhy Companies, Milling Companies, Prospectors, et bles, Societies, et Laistose, Furnacces, Muriles, Cru Dies, Societies, etc., including, also, a full stock Chemicals. San Francisco.

towars.

Vige been engaged in turnishing these supplies

Vige been engaged in turnishing these supplies

Vet checovery of mines on the Pacific Coast, we'l

Vor these goods, both as to quality and prices,

Illustrated Catalogue, with prices, will be sen

cation.

phicachon.

## Our Gold and Silver Tables, showing the value per the Our Gold and Silver Tables, showing the value for the Laborate the Company of Administration of assays in grains and grammes the computation of assays in grains and grammes like for computation of assays in grains and grammes in the computation of the peans the season of the peans the peans the computation of the peans the computation of the peans of the computation of the peans the computation of the peans of the

Nevada Metallurgical Works,

ио. 28 втеченом втреет,

Near First and Market Streets, S. F.

Огев worked by any Process.

Ores Sampled,

Plans and Specifications furnished for Assaying in all its Branohes. Analyses of Ores, Minerals, Waters, eto Working Tests (practical) Made.

most suitable Process for Working Ores, Special attention paid to Examinations

Mines; Plans and Reports furnished.

O. A. LUCKHARDT & OO.
(Formerly Huhn & Luckhardt, )
Mining Engineers and Metallurgiste.

METALLURGICAL WORKS,

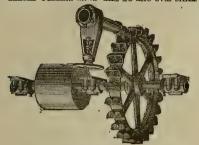
818 Pine St. (Basement,

corner of Leidesdorff Street, - SAN FRAUCISCO

Assaying and Analysis of Ores, Minestals and Waters, Mines Examined and Reported on. Prectical Instruction given Treating Ores by im 0ved processes.

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOUR WHEELS TESTED by the Idaho Compeny at Gress Valley, Call, and favoles go 2 per cent, distancing all competitors. Goal of the Guaranteed estimates.

Accurate Parke & LACY, SI and SS Fremont Street Agents—Parke & LACY, SI and SS Fremont Street.

INVENTORS, TAKE NOTICE!

258 Market St., M. E. cor. Front (up steirs), San Francisco Experimentel machinery and all kinds of metal, tin copper and brass, L. PETERSON, MODEL MAKER,

> QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE TO

JICS and TROMMELS. COBNISH BOFFS'

FRASER & CHALMERS,

ENCINES AND BOILERS.

-basi ni noiterequ ni al

This Mill as a Crusher and Pul-verizer is without rival.

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

PUMPING

ENCINES

MACHINERY,

CORNIZA

, SAMU9

GENERAL OFFICE AND WORES: Fulton and Union Streets, Obicago, III.

NEW YORK OFFICE:

UTAH OFFICE-SALT LAKE OITY, UTAH. Room 48, No. 2 Wall Street.

Mining Turbine Water Wheel JAMES LEFFEL'S

DENARY OLLIGE:

MEXICO OFFICE:
No. 11 Calle de Juarez, Chihuahua, Mexico.

No. 248 Elghteenth Street, Denver, Colorado.

TRAMWAYS,

ENCINEZ'

MIKE ROPE

HALLIDIE'S

HOISTING

These Wheels are designed for all purposes where limited quantities of water and high heads are unfilled, and are guaranteed to give more power is transmitted direct to shating by bolks, placed on horizontal space, to shating by bolks, despensing with gearing.

Estimates turnianed on application for wheels specially built and adapted in particular case not be obtained for an of construction, as well as the capture of the construction, as well as the structure of the construction, as well as the structure of the construction, as well as the confined when the construction, as well as the set of cost, and the construction of the construction

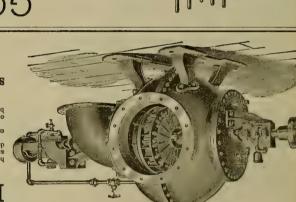
Springfield, Ohio,

or 110 Liberty St., Mew York

FRASER & CHALMERS, General Agents,
Chicago, Ill., and Denver, Col.

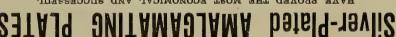
JAMES LEFFEL & CO.,

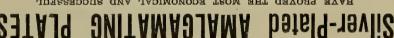


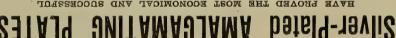


COLD MINERS

Quartz, Gravel and Placer Mines!











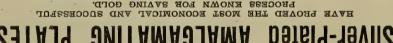






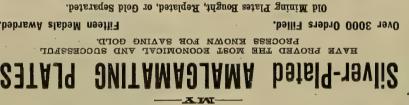


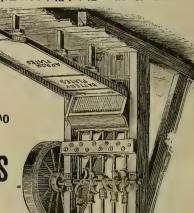












MOLICE.—My Silver-Plated Plates are well known and used everywhere. They have proved superior to all others in durability

American Exchange Hotel,

THOMAS PRICE'S ASSAY OFFICE,

668 and 666 Mission ST., 8an Francisco. E. G. Denniston, Proprietor.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

ROPTION ROOMS SUG ORE FLOORS CHEMICAL LABORATORY,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder, Ores Received on Consignment, Sampled, Assayed, and Disposed



OHAS. & WM. MONTGOMERY, Prop'ra,

#### SHAREHOLDERS' DIRECTORY, MINING

D OTHER S. F. JOURNALS.	TO COUNT T	OTSTANSFORM OF THE	EN RYN RYN THE	NTS.	CITATORNO TATORA (TATO	MUMIT	SARRI THOUGHUS	OWNERDE
STANDED TO P STREET OF	es numad	DISTANCE OF STATE	Durini	TATE	BETTER DIRECTOR &	MOGE	THE OF THE OFFICE AND ASSESSED.	de marco

.8	LN	SSME	<b>H</b> 8	SSA					_		
80	CHA.	Mining	N1	BTM	W	TIBE	ЯВУСЕ	MORT	YAGRAUI	T	

el tank	44	49	emorna8 088	Taire	H M H sirr	offileD. of W	Tango Donginger	H neg
di ylut	25	35	8 Montgomery	38h	BM L. BRON	itA	King M Co	Silver
TT 1095	· · · · · · · · · · · · · · · · · · ·		28 Montgomery	8oizm	oM C., simic	CoCalifo	Reduction & M	Russe.
S vo M	10		28 Montgomery	tts Oliver 3	Pada., W Le	9M	use Valley M Co.	Parad
C AON	97	Se	300 Euro	Willson	ALM., LEDA	19 M Mel	Con M no B	Emek
el velvi	or			ZC	DIB. T. WE	OoOBlito	E Blue Gravel M	Derbe
4 300	20	**************************************	Na montgomera	TARVEDS	W.ASDEV	ONT """ O. 1	M &V & sinrollis	COD
PAYABLE	,титомА.	T S	OLLICE IN	RETARY.	row SECT	TAUOII .	TE OF COMPANY	FATF
	*	SHINOM S	DANTERE	NDS-WILE	DIATOR	LEHLYT		
IN ACATTERS	lais.qg.						Comstack Con 8	manos
46 AUN	foir all	***************************************	Signo ile D 208	Ruffington	MI I ober	OM CO M	a troll to dample	попрати
E WOM	ferran A	75	ruid 018	wad	W L oben	ovino	tek M Co	Omorr
MI VOV	fannn A	48	granolifeD 808	VATTRE			oD M IsnauT	
DATE,	MEETING	S' E'	OFFICE -IX	RETARY.	тои, акол	TADOAI .	KE OL COMPANY	ZVN
			'ATTREE NO	TINGS TO	ra ra rat			
ontgomery St	M &88	A Waterman.,	di vonda	. 300,.02 4qed	02 "T "7		oJ M Lo	
ontgomery St	IM 90₽	J M Quay	1Nov 30	YOM TS Just	č0₽&	CoCaliforni	nia Creek Hyd M	Wirgin.
California St	₽£₽······	A Berry	16 Dec 10	VOV., 8 4 0	FZ ''Z ''E	furofilsO	Con M Co	True
310 Pine St	***************************************	G R Spinney	11Dec 10	VOM 7 350	OI "77."B	DRYON	ion 8 M Co	Scorpi
ontgumery St	W 688	A Waterman.	'ST AON' /Z	300c tqs2	CZOI 8	DOSITA	SES INT CO	Recure
38 Hiobsabia		nebloH q 2.	OT ADAT TO	ייים ייום חומנייי	er	D.BY S VI IN EVR.CL	Bonanza M Co.	MOREN
mtgomery St		tunH I C.	J Dec 26.	5. Ct. 19. 15.	or "TE" TO	intoinsO	W Oso M Oso C	MOM (
ontgomery St		oisiroM L.	'ZZ AONT'''T	VOM TE Jask	Z56	OTTOTILED O	O Wer Gravel M C	THEFAIL
ontgomery St	INT CCC	G W Sessions.	"IZ AOAT """OF	doO di dqsB (	nc **#Z***B	inrolila	M Co	ouota
ontgomery St	TAL ZZC	T Wetzel		doo., dt tgeb		THE COLUMN THE	Oak Drift Gravel	TUAG
ontgomery St		W L Oliver		. Ded. A . Dec.	01 00 000	LIBUT.	M Co	TIEST
ontgomery St	THE COO	A K Durbrow.			00° **10****	DAVETALLA	L& Curry M Co.,	CAGGIG
38 amosnas 5	TO COC	Baiuno H.				THIOTHEO:	elupe M Co	change
Phelan Block	LG	Tomorra M.	of part 30	VOM IS 450	90 07'''	in robital	O THE POSSEST THE	anina
		T Wetzel	,è nst7	Tool is not	OT UL IL O	tarostino.	pion M Co	TURTO
ac CromoSom	W 004	for to W. T	00 000 60	voM., 32 toU.,	76 6	irraogifo()	M unia	O D
48 macmontat	Mr 803 an	H De Landres		VOM IS doO	1 1 1	imotife()	nche M Co	Compa
48 ani T 088.,		,D M Kent		VOM 81 400 (			oD M god sit.	
OR BUSINES	X. PLACE	SEORETAR	ING, NI BYLE	I. LEVIED. DEL	MA ON A	LOCATIO	TPANY.	COM
		-			-			

## PAOIFIO OOAST WEATHER FOR THE WEEK,

lard Con M Co...... California, J W Pew.......310 Pine 8c...... 05

.oru	trae	rmel		11188	900 (	oa II.	8008	004 1	89480	ibai	- :	OKKA	J Y	a :1	isì .	1 <u>H</u> :	vbuo	40	ro :x	clea	tol J	υ—.	MOIJ	EXPLANA
••••			00°				00*				20-	12			T.				Ł		1		20'1	Total
-	-	-	•	-	_	-		OJ.	W.M	69	00.	OF.	M.S	99	00*	CJ.	8	99	00°	Cy.	8	09	81.	Wednesday
GI'	WW	<del>6</del> 9	00*	GI"	Μ	04	00"	CI"	E	89	00.	OI"	WW	79	00°	Er.	0	99	00.	Ey.	8	₽G	Z9*-	vabsənT
.1A	М	99	00°	Qy.	WN	99	00°	CJ.	<b>M</b>	69	00°	CJ.	MN	09	00"	Gr	N	89	00.	Cy.	M	8₽	20°	XabnoM
Gr																								
Br																								
Or	WM	<b>F</b> 9	00°	.vo	<b>W</b>	89	00.	CZ.	М	99	00°	Er.	ЭS	<del>5</del> 9	00°	Er.	S	02	00*	.VA	S	23	00"	ysbir4
GI"																								
Weather	Wind	Temp	Rain	Weather	Wind	Temp	Bain	Westher.	Wind	Temp	Rain	Westher	Wind	Temp	Bain	Weather.	Wind	Temp	Rain	Weather.	Wind	Temp	Rain	DATE,
•0.	8010	g u	38	.89	e.St	A	топ	.00	etot	181	H.8	.01	nen	rei	Sac	TK:	mie	T pe	भ	·r	эпе	110	<u>а</u>	
		1.0	'9'	a *sď.	100	LATOS	AC TH	n Sta	21186	Sinc	t turn	TOES.	MOS	THE	r Ra s	eded	E STITE	ш	OTAN	эпап	d to	ner	RIUL	n.ail

#### WHOLESALE, THURSDAY, Nov. 10, 1887, San Francisco Metal Market,

	65 A9	Pla wilestiff	90	มช	U'2 1.		ו טיי	_	UG L	ш
_	9 30	Elasks, new	09'8	82.7	86	67.7	FEI	104	ZI.	
00	00 (C3)	QUICKSILVER—By the fiash38	92.8	77.7		****	::::	:::.	62.	
07	1, 20) 01	Oharcoal	09*	gg.	OZ*	09*	gg*	gş.	ĝĝ.	и
ñc	7 60 00	Tinplate-Coke	00.8		09.2		2.50	27	2.00	ш
O.T	30 01	Naylor & Co	9 10	¥6	09 6	62.6	Öτ	Fo.	00.8	
Dr.	10 @ P	Machinery	80	10	U.L	00.0		10	0113	
2	S.I.	Moching	01 29	¥9	0 <b>t</b> 59	02 5	00.8	#8 8g	8g	
20 20 20 20 20 20 20	917	mold.								
	916	Black Diamond, ordinary sizes	47£	56.8	37.2	09.8	08.2	06,2	G4 2	в
93	Ø 91	STEEL-English, Th.	47E	₹9T	₹8I	121	1778	91	24T	1
-	20 (D	Ohilled, do	96	06*	90'T	06"	20'T	9F	ST T	В
-	@ 00	Buck, # bag				****				
	Ø 08	Shot, discount 10% on 500 bag. Drop, # bag. 1	97, P	****	3,50	3,40	4.25		GZ*₽	а
No horse	Ø 8	S heet,	9T°%	90'%	2,05	00.2	UP.8	GG'T	2,75	13
CI.	20 00 2	B81	97.	****	08.		00°T		1.00	Ш
9 <u>2</u>	9 00	LEAD-Pig	gt't	00.1	97.1		32. I	01.1	08.1	a
-		Shotte, No. I32	0T.2		09.2	00.5	02.2	06.I	2.00	Ш
_	Ø 03	Clay Lane White	29.10	Eq.	54	¥9	8,	03.9		
_	-50 05	Oregon Pig, ton		89	05.4		84	03.5	9p.	
00	G (432	American Soft, No, I, ton	000	00.8		₹8	FET	62.6		u
		Eginton, ton.	03.6	00.5	Anr.	. 78	98	36.0	11	H
00	9239	IRON-Glengstrock fon	OFT	0017	2017	note	98	38.1	6	ı
20	189 -		24.I		03.I		34°I	98 1	1 E0	в
13	@_6T	Fire Box Sheets	3.65	38,8		3.10		06,8	38.8	в
131	9 6T	Ingot	38,I	07.1	97.5	1,70	29	09 9	00.9	в
_	9) 6I	Sheathing	-							-
12	@ 6I	Bolt								
_		COPPER—	OT .	MOV		MOV.		Oct	.02	.1
8	@ g′	Armagosama		END	DNI	END	DNI	END	DNIC	
8	Ø)+4	BORAX—San Bernardino	EK	ME	RE.	ME	DE	ME	HH	Ä,
-	9 44 6 9 8 6	ANTIMONY-French Star								

#### New York Metal Market.

					.07.46	)09.48—a	TRV.
					\$55 00.	I ON-N	IRON
			.(	@12,00	00'IT\$-	PER-LAKE	COL
						wx-23w	
				'ZO J	əd <u>∩{</u> 76-	SILVER-	BAR
					:89	KOPE pric	WSW
Barwollot	ING CUG	TOCK 6	"AON"	petab	advices	graphic	Jele,

be trede vilenierou over (bodinore pi based and an and	1	. 20	0.4.0		4 5 5 5	
MARRES' PRICES-At tidewater, 100-ton lots of listed		****	**** OT'			н
\$4,90@4.95. Antimony, \$8.70@8.75.				101		II.
10.25; Foreign Lead, \$4.67@4.70; Foreign Spelter,	g9°	0 <u>Ž</u> .	67.	09. 37.	09'	ı
Totalog anieroff .07 Ap. 73 Ap. bee. I anieroff .38 At	1.30	1.40 1.25	31,135,1	20.1 OT. I	1'02	
Orford Copper, \$11.75@; P. S. C. Copper, \$10.00@	₹9	£9 92°9	94.6 5.76	94.8 49	06.8	ı
Banca Tin, \$@ Baltimore Copper, \$114@114;	09.2	3,05 2,30	2,101.2 40	2,001,75	08.I	ı
tralian Tin, \$32.50@33.00; Billiton Tin, \$@;	67.8	00.8 06.6	09.7 88	24 28	08.1	ı
buyers' and sellers' views. All prompt delivery. Aus-	3F.2	2,25 2.40	00.8	**** 00.≯	.:	H
in on call at the M. Y. Exchange, covering extremes of	09.	SP. SP.	04, 08,			ď
Prices generally ruling for metals not regularly deal-	4.25	4.404.10	5.25 4.25	06,±32.8	92.1ª	ı
	30.5	01.10	40.1 -0.4	00.120.2	77.1	ı
sued at \$32,15.	or.	or.	· · · · trr	201 201	09°6	ì
. Ти-Quiet at \$28.80@29.00. Transferable notices is.	30.E		oz. I	1.25	02.1	ı
fices issued at \$4.30.	30 F		1 00 1	30 1	00.4	ŀ
LEAD Dull at \$4.20@4.55 spot. Transferable Mo-	00.0		4.25	*** ****		ŀ
ferable Motices (Lake) issued at \$12,45@	100 2	CO'T CO'C		OF THE OLIVE	4.30	ŀ
	#g	5,00 4.55	4.65 4.30	04. 4 G7. 4		
COPPER-Active, spot closing at \$11,00@12 00. Trans-		7.96 T	2,25	2,101.2	gr't	Į.
York Metal Exchange Market Report":						н
The following is the latest by mail from the " New	96*	06, 06,	88. 06. S	88, 86,	67.	ı
COLCREIT VER - 841			2.50	1		1

as tuoda vilanimon esper (hedisegs at hused nedw) aport
MARRES' PRICES-At tidewater, 100-ton lots of listed
\$4,90@4.95. Antimony, \$8.70@8.75.
10.25; Foreign Lead, \$4.67@4.70; Foreign Spelter,
Orford Copper, \$11.75@-,-; P. S. C. Copper, \$10.00@
Banca Tin, \$@ Baltimore Copper, \$114@114;
tralian Tin, \$32.60@33.00; Billiton Tin, \$@;
buyers' and sellers' views. All prompt delivery. Aus-
in on call at the M. Y. Exchange, covering extremes of
Prices generally ruling for metals not regularly deal-
sued at \$32,15.

No. 2, \$18.50@; Grey Forge, \$17.00@
Forge, \$17.50@19.00; Southern, Grade No. 1, \$20.00@21.00
00 100 00 010 1 -16 -1 0 00 010 01 210
Grade No. 1, \$20.50@21.00; No. 2, \$18,50@19.00; Grey
to a series to the series to Beautiful to the series of th
\$19.50@20.00; Grey Forge, \$17.00@17.50; Hudson kiver,
follows: Lehigh, Grade No. 1, \$21.00@22.00; No. 2,
irons (when brand is specified) range nominally about as
MARRES' PRICES-At tidewater, 100-ton lots of listed
\$4,90@4.95. Antimony, \$8.70@8.75.
town to the second town and the second town
10.25; Foreign Lead, \$4.67@4.70; Foreign Spelter,

#### Don't Fail to Write.

Should this paper be received by any subscriber who does not went it, or beyond the sine he sintends to go you so do so he so

	coast kinds are for the moment out of market,	87.8
	cite, cannel and Sydney are lower. Several	99°#
	owing to free receipts from Australia. Anthra-	ogi.
	several kinds have recently been marked down,	oge.
	Foreign coals continue scarce, as a rule, though	09'9
1 12	the first 10 months of the year 845,100 tons.	\$9.1
	October were large, being 108,460 tone, and for	29°2
	COAL,-The receipts of coal at this port in	\$6
		68

Sales at San Francisco Stock Exchange.

86 98 80.8 80.2 84. 85 82. 82. 82. 82.

S. F. Stock Exchange. Isble of Lowest and Highest Sales in

091

şg

97.8

COMPANY, MVME OF

27.7 821 00.1 

\$1 88.4 87.4 08.4 08.4 08.4 08.4 08.4 28. 04. ... 04. ... 84. 88. 03. 88. . 29 . 21 . 09:9 &8 . 31 . 18 . 21 Alibba. R. & Belober. Belicher. Baltimore. Bullion Belle Isle... Bodie Con.

Ttallow Jacket.

Warsh O. Warsh (Warsh Warsh Morth Belle Isle. Warsh Warsh Warsh (Warsh Garsh G

Mexican M t. Diablo..... Northern Belle.

#### Power in the Future.

and these improved compound engine of to-day, with all its appliances for economy, efficient service, and then let him try to estimate what the cleatric motor of 30 years hence will percitice, her comes as a result of long precitics, her comes has come as as result of long precitics, her comes has come as as result of long precitics, and the split of such that the split of the sp all its appliances for economy, efficient service latest improved compound engine of to-day, with was 40 years ago, and then examine the very Let any one consider what the steam engine

#### New Incorporations.

The following companies have been incorporated, and papers field in the office of the Superior Court, Department 10, San Francisco: Jeck, manufacturing, dealing and operating all finds of electrical apparatus, machinery, applications, manufacturing, dealing and operating all electricity may be applied. Capital stock, 860,000. Directors—Geo, S. Ladd, J. C. Henderson, James Armstrong, Juo. O. Sabin, W. G. Chiver and W. H. Armstrong, Juo. O. Sabin, W. Stock, 8150,000. Directors—R. M. Hearick, C. S. Holmes, Chast. Hanson, W. J. Adams, A. Stock, S. Lolmes, C. S. Holmes, C. S. Holmes, C. S. Holmes, M. & M. Co., Nov. 9. Location, J. D. Moore, C. F. A. Talbot and W. H. Armstrong, July 1, Adams, A. J. Adams, A. J. Adams, A. J. M. Moore, C. F. A. Talbot and W. H. Armstrong, J. J. Co. J. July 1, M. M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. & M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Moy. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Nov. 9. Location, J. Julian M. S. M. Co., Moy. 9. Location, J. Julian M. S. M. Co., Moy. 9. Location, J. Julian M. S. M. Co. Moy. 9. Location, J. Julian M. Julian M. Julian M. M. S. M. Co. Moy. 9. Loc

JULIAN M. & M. Co., Nov. 9. Location, Novastile, Flacer Oo. Capital stock, \$10,-.
Nowoestle, Tlacer Oo. Capital stock, \$10,-.
Mon. M. Scarge H. Schnabel, Henry Deas and Stock M. H. Scarge.

#### Mining Share Market.

Although transactions in the mining share market are of small volume, and the prices low, there seems among dealers an expectation of theire are runous of irrelier times before long. There are runous of irrelier times before long. There are runous of irrelier times everal of the Comstock mines this week, thus adding to crushing facilities. The Carson Tyvèure says: "The water in the Ostson Tyvèure says: "The water in the not enough flows to help mill operations much, not enough all of them are in operations much, judging from the lengthy ore trains, the work-ingoing from the lengthy ore trains, the work-ing all the mills is an actual necessity."

#### Ballion Shipments.

We quote shipments since our last, and shall

be pleased to receive further reports:

Eureka Con., Nov. 7, \$14,759; Richmond
Con., 7, \$15,346; Moulton, 2, \$117,440; Bluebird,
4, \$27,312; Hannerer, 3, \$1940; Germania, 5, \$1589;
\$1783; Hannerer, 4, \$1980; Germania, 5, \$1680;
Hannerer, 5, \$1950; Crescent, 5, \$7450; Hannarer, 6, \$1950; Crescent, 5, \$750.

MINERS, WAGES LOW ENOUGH,—The miner's life is a hard one, Such accidents as that of the Yest mine and worse ones are the King of the West mine and worse ones are of frequent occurrence. With the best of precautions a miner is lable at any time to be laid up with a broken limb or lose his life and to have his laften and the world. His work is hard and in many mines extremely unhealthy. His board coats from \$\frac{3}{2}\$ to \$\frac{3}{2}\$ to week. All his necessary expenses are a heavy drain upon his purse, He such mines extremely unhealthy. His board expenses are a heavy drain upon his purse, He fortunes that are made by the owners of the fortunes that are made by the owners of mines, surely the wages of their employes should be kept at the present figures, instead of reducing them to \$\frac{3}{2}\$ and \$\frac{2}{2}\$. So sad \$\frac{2}{2}\$ should be kept at the present figures, instead of reducing them to \$\frac{3}{2}\$ and \$\frac{2}{2}\$. So as is proposed, MINEES, MAGES LOW ENOUGH, -The miner's

Wews of the advance in copper was received with pleasure in Arizona, where the copper interests are large, Co., E The debts of the Monte Cries mine, Mono o., have been paid off and work has been remed.

> Inventors. List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Ploneer Patent Solicitors for Pacific States.

From the official report of U. S. Patents in Daway & Co.'s Patent Office Library, 270 Market St., S. F.

Cal.

372,403.—SIDE-HILL GANG PLOW—S, M. Cunningham, Coyole, C.Al.

372,611.—ELEVATOR SHAFTS.—N. A. Fisher,
372,611.—ELEVATOR SHAFTS.—C. B. Hunter,
Tiever, Cal.

71,829. Cal.

372,373.—Station Indicator—I, H. Huribut,
S, F. 373.—Station Indicator—I. H. Huribut,
S, F. 373.—Death. Evelue—II. FOR WEER ENDING HOVERBER I, 1887.

372,285.—Air-Tight Butter Package—E. F.
Badgley, S. F.
Cal.
Cal.

372,317.—DENTAL ENGINE—W. A. Knowles, Alanceds, Cal. PAPER-CUTTER—J. F. Meador, Prescott, A. T.

couf, A. T.

Cheney, W. T.

Cheney, W. T.

372, 387, —Ball Caster, Rix, S. F.

372, 387, —Ball Caster, Ribin, Or.

372, 338, —Dvamite—N. Rubic, Salem, Or.

372, 338, —Dvamite—S. D. Smolianinoff, S. F.

372, 349, —Sash-Fasterer—Emma J. Whitman,
Oskiland, Cal.

Vors.—Coples of U.S. and Foreign patents invasible of Dy mail by Dewey & Oc., in the shortest time foreign patents of belegraphic ortein. American and foreign patents believes tor Facilio Cos 4t invasions thensened for Facilio Cos 4t invasions transacted with portect security, at reasonable rates, and in the shortest possible time. 3/2,349. Cal.

#### Notices of Recent Patents.

Dewey & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are Among the patents recently obtained through

Weekey & Co. 8 Scientified Passa O. 5, 3 and Tronging Patent Agency, the following are worthy of special mention:

Loom Shuttle.—Chas. G. Root, San Quentin.

Loom Shuttle.—Chas. G. Root, San Quentin. Mo. 372,239. Dated Oct. 25, 1887. The invention relates to shuttles arms earned stabilities are and it consists in the combination with a shuttle sold it consists in the combination with a shuttle body of an improved tip and fastening bolt. In the manufacture of loom shuttles it is constituted by means of a flat plate which is variously boint projecting from one side thereof, which be protected to the shuttle body and are sometimed. We have a spen or erly between the threads of the shuttle proportion of the last plate severed to the shuttle proportion of the last plate severed to the end of the shuttle proform means of the spicker which throws the shuttle or magnitude by sometimes secured to the end of the shuttle or magnetic of two pins which project from the plates are sometimes secured to the end of the shuttle or magnetic of two pins which project from the plates are secured to send of the shuttle or trapid movement of the shuttle and the violent rapid movement of the shuttle and the violent rapid movement of the shuttle and the violent rapid movement of the shuttle shuttle is to be also the violent rapid movement of the shuttle shuttle in the violent rapid movement of the shuttle shuttle in the wood or loosen the plates, By peculiar constitution to the latter, and at the same time provide a simple and secure means for holding the same simple and secure means for holding the same time time provide a simple and secure means for holding the same the secure.

#### Bingham Canyon.

Hentors Press:—Bingham canyon, a mining camp with a population of about 1000, is situated at a the D. & R. G. R. R., R., S. miles from Salt Lake & R. Giy.

City.

This camp has seen better times than at the Toly.

This camp has seen better times than at present, but the Yosemite Co. are working a parge force of men and taking out good ore.

Your correspondent visited the Wast mine, two miles from fown. They have a tunnel in 775 feet, and are taking out ore which will average 40 per cent lead, 10 to 15 per cent allver, and worth about \$40 per ton.

The Nast Company, of which Chas. W. Watton is superintendent, are going to start snother tunnel lower down the canyon, and also erect a 10-stamp mill. Bingham is one of also erect a 10-stamp mill. Bingham is one of the best lead campon, and the best lead campon, and best best lead campon in Utah.

Salt Lake, Utah, Oct. Ze, 1887.

OLAYTON AIR - COMPRESSORS IN CALAGON WORK.—In a recent letter from Ool, Geo. S. Work.—In a recent letter from Ool, Geo. S. Work.—In a recent letter from Ool, Geo. S. Workson, C. E., to the Clayton Air-Compressors of the Working of your air-compressors, and just now, as you know, have four No. 4 Clayton Duplex air-compressors in actual work, two at Omaha and two at Kulo." Col. Morrison also used the compressors in actual work, two at Omaha and two at Kulo." Col. Morrison also used the Clayton air-compressors were also used the Bien railway, at Connoil Bluffs, on the Union on the Missouri Valley & Blair railway. The Clayton air-compressors were also used in cais on the Missouri Valley & Blair railway. The Clayton air-compressors were also used in cais on the Missouri Valley & Blair railway. The Clayton air-compressors were also used in cais work at the Arkansas Liver bridge, Lithtle Couplex of a large size at the Harlem River bridge, New York City. There are also three tunnel, Mew York City.

TWENTY THREE bars of bullion valued at \$56.-258.19, representing the cleanup for October, were received from Concolidated California Wednesday. Total for month \$227,517,67,

Austiu, Nev., is practically deserted by its



## ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Tramesrs, Elevators, Signals and all kinds of Electrical Systems for lightlug and smission of power, either direct or with storage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

#### EDISON INCANDESCENT LIGHT,

The only complete and satisfactory incardescent system. Lights require no attention and are under complete control of New York Solid Spiker in the United System of Wallack System of Wallack System of Wallack System of Wallack System System of Wallack System System of Wallack System System of Wallack System Sy

#### Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

#### No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

#### NILHO-CI-ACEHINE

# Blasting Powders, Vigorit "LOW" Powder,

FOR REMOVING STUMPS AND TREES, HAS NO EQUAL,

WORKS: California City, Marin Co., Cal.

H.H.H.

HORSE LINIMENT.

ED. G. LUKENS, Manager.

Patent Agency. Uewey & Co.'s Scientific Press



OUR U. S. AND FOREIGN PATENT ACENOR Dresents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, thorough system, intrinse sequentiatione with the subjects of inventions in our own community, and out most extensive law and refurence library, con most extensive law and refurence library, con most extensive law and refurence library, con fidural mentions and foreign reportes, and other control of farming of didical American and foreign reportes, and the first protection in the first particular farms of the farm of the farm of a description in the Minute August farm of Patens in all countries which great protection to inventors The farmed to inventors on the Pacific coast have been obtained through our Agency. We can issued to inventors on the Pacific salvice as to the patentability of new inventions, Our prices is all owns are as low as any first-class agencies in the patentability of new inventions. Our prices are as low as any first-class agencies in the Deast inventors are far superior. Advice and Circulars free, while our advantages for Pacific Grant farmed and any first countries are in the control of the farmed and foreign farmed and foreign farmed for inventors are far superior. Advice and Circulars free.

Circulars free, Elevanta Agents.

Wo. 320 Market St. Elevator 12 Front St. St. Televator 12 Front St.

S. F. Telephone No. 658.

V' L' DEMEK' - M' B' EMEB' - GEO' H' SLEONG'

# Madame (joldschmidt, who died in London a few days anoe, at the age of 66, is better remembered in America as Jenny Lind, "the membered in America as Jenny Lind, "the Swedish nightingsle," People now in middle life can well recall the marvelous popular extended her singing in various oites of the Union tended her singing in various oites of the Union country, and the furce of enthusiasm which attended her singing in various oites of the Union nearly 40 years ago. The reah and rivally to purchase toketes to her oncetes, the encounous profits which soorted to her and Pt. T. Bernum, nucles one to the conceast, and the trumphal progress from place to part of the history of a past generation. It is many years since she with the many years since she with the the tructuals for some benevolent rundom that the news of her death awakens tender memorates of which at their way of her death awakens tender memorates of which at their way were as lovely as her voice was enchanting.

Madame Goldschmidt, who died in London a Jenny Lind Goldschmidt.

#### Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subsected to examine its contents, terms of subscribent, and in circulating the journal, and making its value more widely known to others, and excending its influence in rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. It shready a subscriber, please show the paper to others.

QOPPER HIGHER.—Gopper and his people of the defender, various, On or about October 26th some 20, various, On or about October 26th some 20, 000 tons build be a were purchased by a French and the price was immediately advanced to £43 5a per ton. Further asles followed, and the price rose to £44 5s. On September 15, 1864, the visible supply of copper in Europe was 66,369 tons, whereas more period forms, whereas now it is from thy 35,549 tons, a reduction of 1333 tons per month. In the same period the Euglish and Frenche stocks have decreased from 54,375 to £2,999 tons, or at the rate of 915 tons per French and the wild from 54,375 to 10 tons, or at the rate of 915 tons per Price 15, 1864, when Chili has been since December 15, 1864, when Chili has been since December 15, 1864, when Chili bars were selling at £47 10s per ton.

The mines of Gerfield, Esmeralds county, are

The mines of Garfield, Esmeralda county, are producing from \$15,000 to \$20,000 per month, with only a five-stamp mill to work the ore, but the milling power will soon be increased.

#### TO MINING MEN.

An interest or control in a first-class MINING PROP-FLTY, now working, will be sold at bedrock price. The string to be used in more extensive development. Full act the Golden State & Miners' Iron Works, at the Golden State & Miners' Iron Works, SSY First St., San Francisco.

#### SPECIAL MEETING.

#### ing Company. South Comstock Consolidated Silver Min-

A stecial meeting of the Stockholders of the South Occasious, Deposited the Stockholders of the Stockholders of the Occasious Operations of Stockholders of the Office of the Company, No. 309 California, on Monda, the Street, cond. A. San Faracaso, California, on Monda, the Street stock of the Campany, November, 1887, at the consideration the disposal of the complete stock of taking into consideration the disposal of the company, Nov. 18, 1837, at Transfer books will be closed on Fraday, Nov. 18, 1837, at St. M. By order of the President of the campany of

#### Practical Treatise on Hydraulic Mining.

This new and important book is on the use and construction of Ditches, Flumes, Dams, Physes, Flow of Water on On Reavy Gades, mebrodes of mining stations and deep placers, history and development of mines, recondred of mining stations are nozsies, hurd-grards, rockers, undercurvents, etc.; also describes history and development of mines are nozsies, muchous of hallings and dump; duty of miners inch, etc. A very practical work dump; duty of miners inch, etc. A very practical work dump; duty of miners inch, etc. A very practical work of miners and users of water. Frice, \$6, post-paid. For gold washings and the series of water. Brites, \$6, post-paid.

world ... a special mission of the solid with Belt with Beltwith a special state of the solid control of the solid TIPE RELEVANCE CHAIN BECTON THE CHAIN BECTON THE CANADAM CHAIN BECTON THE CHAIN BECTON THE

HEALD'S SOLLEGE, COLLEGE, B. Post St. S. B. F. Sand for Grander.

I New 12-inch, 35 H. P. Engine.

VERY OHEAP. Apply
130 Sansome St., room 12. 2 Triumph Concentrators.

Special attention given to menecement and sales on mines and purchase and shipment of copper produce.

QUARTZ MINES FOR SALE.
Under good bonds, several first-class Gold Quartz Mines, tocated in Amador county on the true lead; well developed and ready for milis. Samples and all particulars at office of the above.

Correspondent as Agent for Smelters in London, Liver-gool, New York, Boston and Baltimore. DUION COPPER MINE, Calaverse Co., UEWTON COPPER MINE, Amador Co.

42.0 Montgomery St., S. F.

Ores, Mining, and Commission, HORACE D. RANLETT,

HOL 2816 DY 811 GTUERISTS

This apper is professional mon; it is a safe of the state of the state

The vast resources of Shaste oounty, which caminod almost dormant for a quarter of a central, and of the inspiration of capital, ury, are, moder the inspiration of capital, gradually becoming developed. This is true frequenting the lumber inferests. Operations in the industry have entil recently been masyer, only sufficient lumber scheme, which perhaps the Pitt river lumber scheme, which base shut down so if acree of anger plue, the most valuable in men would caree out for himself a home; with many wars been unman would caree out for himself a home; with man work with the country have for many years been unman would caree out for himself a home; with a men would caree out for himself a home; with a faiturbed, only where an occasional frontiers. The exception the wild beasts have been unfaiturbed in their cool retreaks. No small disturbed, only where an occasional frontiers for exception the wild beasts have been unfaitured in their cool retreaks. No small disturbed in their sond retreaks. Wo small disturbed in their sond retreaks. Wo small adequate. But as a flate purchasing the interior beats of horse & Sons, endeavored to do something but soon found that their means were interior but soon found that their means were interests into merotanders means were interested for a corporation was formed under and foresight a corporation of their conscience and foresight and parallesses agently. Their combination of one sound in a seouring a large amount of seventing a large succeeded in seouring a large amount of seventing a large succeeded in seouring a large will be account of seventing a large of the best of the order of the seventing a large of the seventing and seventing a large of the seventing and seventi

Ove Farawos can do much in aid of our paper and the cause of practical frowledge and celence, by assisting duence and encouraging favors. We intend to send none but worthy men. A second of the condition of the Agent of the condition of the call of the condition of the Agent of the condition of the call of

THE reopening of the copper mines near the lines of the Stockton & Copperopolis railroad lie regarded with great interest by the local foundrymen and metal workers. If success should attend the efforts of the company having the mining work in hand there will be no need to go shroad for supplies of the useful metal.

#### Books on Assaying.

ву С. Н. ААКОИ.

#### PART I.-Gold and Silver Ores.-Price \$1.

work is written by an experienced metallurgist by owe described metallurgist by the conformal me

#### Table of Contents:

.III dna II staaq

#### Price \$1.75. Lead, Copper, Tin, Mercury, etc.

This book is entitled "Assaying—Parts II and III," and is separate from Part I, and treats of Gold and Silver Bullion, Lead, Copper, Tin, Mercury, Sinc, Nickel, Cobalt, etc.

#### Table of Contents:

ing by Josef, and Appendix to Part III, The Assay of Lead; The Assay of Copper.

There are 160 Tam jugges with linestetions in acte volumer, There are 160 Tam jugges with linestetions in the volumer, The property of the pr

#### Steam Engine Catechism.

A SERIES OF DIRECT PRACTICAL ANSWERS TO DIRECT PRACTICAL QUESTIONS—MAINLY INTENDED FOR YOUNG TRANSMINATION QUESTIONS.

This book is intended to answer not only "each direct questions as have been asked by both theoretical and questions as have been asked by both theoretical and warford and in the upper serior schosen with the view of saving state of the celly at the intended to a serior action and the saving state of the celly at the intended of a post-bed while the books is not written to wrotesially correct and mathematical gymnastics are avoided. Formalism of the STEAM EMGINE CATECHISM contract to the STEAM EMGINE CATECHISM contract to the contract and the saving state of the distribution in the contract and the saving state of the

#### Iron and Machine Works.

CALIFORNIA MACHINE WORKS,

WM. H. BIRCH & CO., EVGIVEERS AND MACHINISTS, No. 119 Beale St., - San Francisco

Brodle Rock Crushers, Steam Power, Hydraulic, Side Walk and Hand-Power Steam Engines, Flour Mill, and Machines Machines Machines Machines

Manulacturers of B. E. Horrickson's Patent Automatic actors for Elevators, All kinds of machiners and repaired.

#### SACRAMENTO, CAL. **UNION IBON WORKS**,

ROOT, NEILSON & CO.,

Engines, Boilers, Steam

Couring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired, MACHINERY FOR MINING PURPOSES.

Golden State & Miners Iron Works. Front St., bet. N & O Sts., Sacramento, Ual.

Marulacture Iron Castings and Machinery of all Kinds at Greatly Reduced Rates.

STEVEUSON'S PATENT

Mold-Board AMALGAMATORS,

Golden State Pressure Blowers.

First St., between Howard & Folsom, 2ts

EUREKA FOUNDRY THOMPSON BROTHERS,

MANUFACTURERS OF CASTINGS OF BVRRY DESCRIPTION, 29 and 131 Beale St., between Mission and Howar

o, k. ortoy.

WOY-ILLAIME & OTTOM,
WONIE, Mc 315 Mission St., San Francisco.
Special attention given to Woodworking Machinery,
Steam and Gas Engines. Correspondence solicited.

#### MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

Address "Business Box A," office of this paper, San MINING EXPERT AND GEOLOGIST.

HOZZ E BROMNE'

No. 307 SANSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

SAW COMPANY N. W. SPAULDING



17 and 19 Fremont St., San Francisco. SAW MILLS AND MACHINERY



Copper or Erssa Screens for all purposes. Cali-

SHIPPING AND COMMISSION MERCHANTS,

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products.

Have correspondents in all the chief cities of the United States, Europe, Australia, India, Ohina and the principal states benefit. Furthers contains products in these goods and sell children products in those countries.

General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass

## PACIFIC ROLLING MILL CO.,

UP TO 20,000 LBS, WEIGHT, Cast Steel Castings and Steel Forgings

True to pattern and superior in strength, toughness and durability to Cast or Wrought in the tor in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SOFT and DUCTILE,

SUPERIOR TO IRON FOR

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from \$ to 3 inch dismeter and Flats from I to 8 inch. Angles, Tees, Ohannels and othor ebape steel Rods, from \$ to 3 inch dismeter and Flats from I to 8 inch. Merchant and lengths and Length and Merchant Iron, Holled Beams, Angle, Channel, and pounds per yard. ALSO, Railroad and Merchant Iron, Holled Beams, Angle, Channel, and Prop. Perchine Bolie, Leg Stowes, Nuts, Weshers, Sing and Books pices; Resamboat Shafts, Cranke, Perchant, Ohonnecting Rods, etc. Car and Locomotive Axles and Frames, and Iron and Steel Bridge and Merchant Iron, Nork a Specialty.

HIGHEST PRICE PAID FORE SCHAP HROK AND STREL.

AT Orders will have browned the Resemble. Bead for Cataloguege Address and Brown and Steel Bridge and Cataloguege Address and Brown and Steel Bridge and Address Address and Brown and Steel Bridge and Address and Brown and Steel Bridge and Address and Brown and Steel Bridge and Brown and Brown and Steel Bridge and Brown and Steel Bridge and Brown and Brown and Steel Bridge and Brown Brown and Brown and Brown and Brown and Brown and Brown Brown and Brown Brown and Brown

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

HINOKUEY, SPIERS & HAYES, Proprietors.

San Francisco.

[ESTABLISHED IN 1866.]

MARINE ENGINES AND BOILERS.— Propeller Engines, either High Pressure or Compound Sten or Side-whoel Engines,

-MANUPACTURERS OF-

Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Water Buckets, Pump Columns, Air Compressors, Air Receivers, Air Pipes, MINING MACHINERY.—Holsting Engines and

Crushing, Amalgamating Pans, Settl rs, Furnaces, Re-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc. MILL MACHINERY.—Betteries for Dry or Wet

Mill Machinery, Saw Mill Engines and Bollers, Dredging Machinery, Powder Mill Machinery, Water Wheels, MISCELLANEOUS MACHINERY.-Flour

**MORKS ORE WET OR DRY.** ratirayla Pulyerizer

ENGINESBOILERS TUSTIN'S PULVERIZER.

Either for use on Steamboats or for use on Land. OF ALL KINDS,

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGENTS FOR THE PACIFIC GOAST FOR THE OF KVERY DESCRIPTION. BOILOT Repeits Promptly attended to and at very moderate rates.

Deane Steam Pump.

Geo. W. Dickir, Мапаger. J. O'B. Gunn, Secretary, Gro. W. Prescort, President. Irving M. Scort, Gen'l Manager, SPECIALITIES:

Corliss Engines and Testin Ore Pulverizers.

Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater

Location of Works, Potrero. P. O. Box 2128.

Office, 216 Market St., S. F.

Pump. Agents of the STEAM, AIR, AND HYDRAULIC MACHINERY.

HOME INDUSTRY, ALL WORK TESTED AND GUARANTEED. Cameron Steam

BREVEERS, KOCK BARY HOISTS, VENTILATING FAUS, BOUT BRANEPER

SHAFTING, Vertical Engines, Horizontal Engines, Automatic Cot-off Engines, Sharfine, Sharfine,

**NNION IBON MOBKS'** CHEAPEST AND BEST IN USE. TRY OUR MAKE,

Room 109. NEW YORK OFFICE, 18 BROADWAY C. A. STETEFELDT, President. THE RUSSELL PROCESS COMPYY,

STEAM, PUMPS, STEAM ENGINES, all kinds of MACHINERY.

essor to THOMSON & EVANS), 110 & 112 Heale Street,

Office, 40 Nevada Block,

Dynamos and Motors of all sizes for Conveying Power from Waterfalls for use in Mines and Mills, erected under guaranty of performance.

Electric Rallways, and Apparatus for the Electric Transmission of Power,

Storage Batteries,

MOTORS, LAMPS

Keith's Electric Dynamos,

Inventor and Manufacturer of

N'S'KEILH'

21 & 223 First St., Sam Francisco, Cal JOHN W. QUICK, Proprietor.

San Francisco Pioneer Screen Works,

Orders promptly attended to

For Flour and Rice Mills, Grain Separators, Revolving and Shot Scorens, Same patteries and all kinds of Milling and Shot Speech, Scorens, Same patteries and all kinds of Milling Machinely 1907, Kon, Steel, Copper, Brass, Investor and Manufactures of the celebrated Slot Cut Investor and Slot Punched Screens,

Mining Screens a specialty, from No. 1 to 15 (fine).

PERFORATED SHEET METAL

We imitation, no deception, no planished or votten from need. Only gamme bussle from the dust Secret. Planished itoo sercens at nearly half my former rates. I have a large supply of Estery Sercens on hand entitled by the Huntington and all Stamp Mills, which I will sell at 20 per cent discount.

Rest and Cheapest in America.

BATTERY SCREENS.

GREAT REDUCTION!

SAN FRANCISCO, OAL,

8 California St., and 21 Fremont St.

PARKE & LACY

REPRESENTED BY

INCERSOLL ROCK DRILL CO.

THIRD EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIONS

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

ni betsereini aredto bus ENGINEERS, CONTRACTORS,

WINING WEN'

NOTICE TO

Factory, II Stevenson St.

H. EVANS

San Francisco,

**MACHINE WORKS** 

JOHN T. SULLIVAN,

OS Fourth St, Ploneer Bul'ding,
BOOT AND SHOE MAKER.
Maker of the famous Musua' Suor. Send for a trial
pair. Goods sent by mail or express.

MP

SEND FOR LATE CIRCULARS.

BACE FIRES of the MARING AND ECREMITY PRESS (un-bound) can be had for \$2 per volume of six months. Per year (two volumes) \$6. Inserted in Dewey's patent bind-er, 60 cents additional per volume.

STAMPS,

PULLEYS, SELF-FEEDERS,

Settlers, Retorts, Etc., Etc.

Successors to PRESCOTT, SCOTT & CO.

SEND FOR LATE CIRCULARS.

PORTLAND, OREGON,

SAN FRANCISCO, CAL,

SALT LAKE CITY, UTAH,



PARKE



ENGINES and BOILFRS. Machinery Machinery, Steam Pumps, Wood and Iron Working

## **BOILER.** NOTJEZA

A NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

SHED CVI-VOLIX,

IN 3 MACHINERY, ETC., ETC., of any DEFINANACES, HOLSTIC, ETC., of any DEFINANACES, HOLSTIC, ETC., of any DEFINENCES, HOLSTIC, CONCENTRATION
WORKS, WATEL, CONCENTRATION
WORKS, MATELY, CONCENTRATION
WORKS, MATELY, CONCENTRATION
FINING TO THE STREAK, THOUGH AND DEFINING TO THE STREAK, THOUGH AND DEFINING TO THE STREAK, THOUGH AND AND
FINING TO THE STREAK, THOUGH AND AND
FINING TO THE STREAK, THOUGH AND AND
FINING TO THE STREAK, THOUGH AND
FINING TO THE STREAK

STREAK, THOUGH AND
FINING TO THOUGH
FINING TO THOUGH AND
FIN

MINING MACHINERY.

HEINE SAFETY

San Francisco, Cal. PACIFIC IRON WORKS,

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

SAFETY, Has the Following Advantages:

AT Builders of 120-stamp Gold Mill for the Alaska Mill and Mining Company; 60-stamp Mill for Quartz Mountain Mining Company.

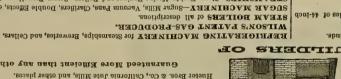
DURABILITY, ECONOMY,

AND FACILITY OF INSPECTION and REPAIRS.

Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Jute Mills, and other places. 60,000 Horse Power now in use.

Guaranteed More Efficient than any other Boiler made.

es and Boilers, Screw Propellers, Centrifugal Fumps, Stea

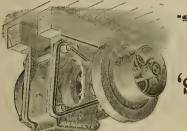


**BOILER**,

QUARTX MILLS—Gold and Silver, Copper and Lead Smelting Works, Rossting Furnaces 1 all kinds.

HEROME-HESCORE-HERSORE-HEROME-HERO

**MATER TUBE** 



оке скозиек

MACHINERY

F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS, Centrifugal Roller zaren7)

Steam Engines and Shingle Machines. Mining Machinery of Every Description,

No. 45 FREMONT STREET, SAN FRANCISCO, CAL. SEND FOR CIRCULAR.

First Premium Awarded at Mechanics' Fair, 1884.

Solo Licensed Manufacturers of the WINING **PERFECT PULLEYS** 

Medart Patent Wronght Raim Pulley

or the States of California, Oregon and Nevada, and the Territories of Idaho, Washington
Montena, Wyoming, Useh and Artenana. Lightees, Strongest, Ohespeet and
Beest balanced Pul-sy in the World. Also Manufaceturers a

Seest balanced Pul-sy in the World. Also Manufaceturers a

Best balanced Pul-sy in the World. Also Manufaceturers a

Best balanced Pul-sy in the World. Also Manufaceturers a

Sea Direction. See Season.

Centrifugal Roller Quartz Mill.

GENERAL MACHINE WORK.

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco.

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc.

SLEVN ENGINES'

San Francisco, Cal



Mos, 129 & 181 Fremont\_Street,

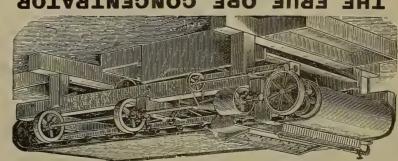
OVER 1400 ARE NOW IN USE. Concentrations are clean from the frest at the wear and teaty to make bests at 220 Frement three, and treet, and transition. (#275,00) F. O. B.

FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

The Moutaky Classics of Courts Courts

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 37, 1880; March 22, 1881; February 20, 1863; September 18, 1863. Patents applied for. M. B.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 adding Frues and more stamps have been purchased. THE MONTANA COMPANY (Limited).

ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OF VANNING MACHINE, CONCENTRATOR OBE THE FRUE

Nos. 39 to 51 Fremont Street,

# MOTIOE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are feeted becomplaints about light weight, made so often before we started in this branch of industry.

SAN FRANCISCO, CAL.

521 & 523 Market St., San Francisco,

JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material.

Agent for HOSKINS' BATTERY SCREENS AND WIRE CLOTH

HYDRO-CARBON ASSAY FURNACES

For SAVING GOLD! NOTICE TO GOLD MINERS!

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES.

FURNISHED ON APPLICATION, GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

No. 108 FIRST STREET. SAN FRANCISCO NOVELTY AND PLATING WORKS

## MACHINE WORKS JOSHUA HENDY

(INCORPORATED SEPTEMBER 29, 1882.)

Room 7, No. 109 California Street,

OF EVERY VARIETY. NEW and Dealers in SECOND-HAND BOILERS, ENGINES and MACHINERY

Stationary, Portable, and Hoisting

ENGINES and BOILERS.

, Shafting,

San Francisco, Cal.

Pulleys,

Boxes,

[Manufactured by the Cummer Engine Co., of Cleveland, Ohio.] SPECIAL AUTOMATIC ENGINES.

> LEATHER and RUBBER BLOWERS AND EXHAUST FANS.

BEPLING'

WINING BOWES

CENTRIFUGAL PUMPS,

Steam Pumps of all Makes,

LUBRICATING COMPOUNDS and OILS

OF THE BEST MAKES.

PIPE and PIPE FITTINGS.

Brass Goods

FITTINGS.

Ore Feeders. Concentrators, Automatic draulic Giants, "Triumph" Ore chinery, Hydraulic Gravel Elevators, Hy-Hydraulic Mining, Quartz, and Saw-Mill Ma-

San Francisco Cordage Factory.

SHINGTE MITTS' Efc.

MYCHINEEK,

Hangera,

"Wilbraham" Rotary Piston Pumps"

Borges & Clarke" Centrifugal Fumps.

The Volker & Felthousen Wirg Co.'s

Buffalo Duplex Steam Pumps.

P. Blaisdell & Co.'s Machinists' Tools

P. Blaisdell & Co.'s Machinists' Tools

AGENTS FOR THE SALE OF

Single and Double Circular Saw-Mills.

PLANERS, SHAPERS,

-comprising-

BAND SAWS, STICKERS,

MOODMOEKING

"Cummer" Engines, from Cleveland, Ohio, Porter Manufacturing Co.'s Engines and Bollers. "Baker" Rotary Pressure Blowers.

611 and 613 Front St., San Francisco, Established 1856.

IRON CASTINGS of all descriptions. CHILLED CAR MHEETS

AND RAILROAD CASTINGS.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco. Cal.

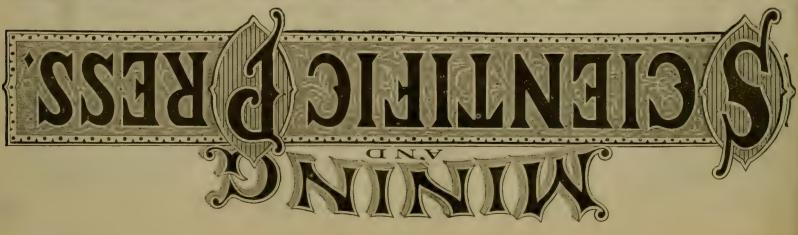
CHAS, B. STEIGER,

957 Market St., views of San Francisco

Machinery, Models and Buildings

Mechanical Photographera,

RUNNELS & STATELER,



Mumber SI. BY DEWRY & CO. liustrated Journal of Mining, Popular Science and General News.

SAN FRANCISCO, SATURDAY, NOVEMBER 19, 1887.

where the lugs sand tengage, the inner cones M, L and K, which are all fastened together, ings to flow over the cone R, and then by raising the cone R, and allowing them to flow over with the lugs to east on the upper inner cone M, and if the cone G is reised above the points first edt gniwolla bas O saco ett gaieier terfi-Not long since Messrs. Clayton & Mackie of the bighest level is by the tailings flowing over sailt Lake patented through the Mining Ann the top of the cone G, and at other levels by this cone has been raised high enough, engage or comparatively dead space, at different levels, is accomplished as follows: The discharge at three equidistant points lugs s, which, when

The bottom A consists of a simple casting, a, and the raising of the connes G and K is effected into which the washing and diluting water is by the following mechanism: Inside the rings which the washing and diluting water is by the following mechanism: Inside the rings with similarly placed lugs cast upon the center by links to the onter and of the lower.

THE CLAYTON AND MACKIE SETTLER FOR SILVER MILLS.

between it and the bottoom A. These three disoharges correspond to ordinary three plugthe cone F, leaving another and lower opening depression of the lower lifting-ring R, without closing the opening between G and E, raises which the tailings will pass, and that a further lifting ring R raises the cone G, leaving an opening between the cones G and R, through above a certain hight, the cone F is also lifted; hence it will appear that if both cones are down on their seatings, a depression of the rings, K, L, and M, bolted together, and between G the top of the cone G. When the dilution of Rand G and resting upon steps or supports m outer cone R, and upon raising the curtain

..........

ह.शुःम

the annular space between the outer cones F and E, which and G and inner cones K, L, and E, which To allow the passage of the etilings through

is traversed by the rubber packings H and I,

has a sleeve or pipe in the center, and through this sleeve the spindle E and bolts  $\tau$  pass. The water-tight in the opening of the curtain or hopper or hopper or the bottom A. This hopper portions of the tailings are washed away. starting, and gradually increased as the lighter pressure of the wash water should be low at smalgam and grading of the tailings into differ-ent classes. To obtain the best results the of the settler, renders the character of the tail-ings at any particular period of the work uni-form, and thus shellteles the saving of the

canses are uniform and similar in every section of the settler. This, when coupled with the discharge in a thin sheet from the central party. ame I radial jets tends to produce uniform up-ward currents around the periphery of the set-lie mori that the induced currents that the

edt tadt (erotnevni edt yes) tnebive ed Iliw II ni retew gnideaw edt to noituditteib mrolinn To bedaew snoitroq reivaed Ilits have proceeded far enough, the cone  $\Theta$  is raised, and heavier portions of the pulp washed off, and then the cone N is raised and

the pulp and washing off of the lightest portion

TOVO SWOR BILLS DOWS

the upper central sames, seemed to control

nest pulp are at

curves. The still-

through the longer

portions traveling

larige ai relium lines, the lighter

edt to noitator ent banora ging

шијјет свивев the

the rotation of the

bus 1918W guidesw

to stel faiter edt

charged as begrade to noites eat tud

settler the pulp is

wheels must be

of the cones R and that to raise both

will be lifted, and

the cone & only

of the hand-wheels

естеwing пр еіthе

ism can be so aver ranged that by

seats, this mechan-

be home on their ot D bas A seno

lower lifting-ring,

snd whose inner

apon the pintle Z,

line. The spindles x from these hand-wheels are threaded at their lower ends and sorew into the standards U, and are also swiveled to

at one time by esteless handling, hand-wheels V, with standards, V, are placed in front of the settler at equal distances from the median

O bas A senso died to gaisler edf ineverq oT

SaimussA

-bash hand-

\*pesn

Ð

In operating this

vide, Placer county, are very satisfactory. RECENT developments on the Forest Hill diis on place for poor men to try to mine in THOSE " who have been there " say that Mex-

reen the cones R and G, rubber packings, R turning about their fulcrums, p, raise the knife.

To The muller spindle B passes through the dead the lower outer cone, R, is effected as follows: lifting rings Q and R, and serves to guide them. the upper lifting ring, Q, the ring-bolts q, and the inner ends of the levers, and these levers, pression of the lower lifting-ring, R, depresses this upper lifting-ring long bolts, r, which go-through the lower lifting-ring R. Any dewe sold diving beterorage are perferenced with holes of the running of the running of the running sear of the selfer, a feeting a selficial of the self-selficial of the selficial of the selfici bolts q, whose lower ends pass through the upper litting-ring, Q. There also pass through ends of the three levers O engage with ringcesses, k, in the tripod legs C. These levers have for their fulcrums the bolts p. The inner U-bolts J, which pass through and are secured to the knife-edges o upon three levers, O, passing through the openings or re-These are engaged by three on egul adt etnioq the tailings disoharge. The apper portion of the cone & has east on it at three equidistant and K, there is an annular space through which a little higher than the top of the cones M, L, tween the cones G and F and the cones M, L, inner cone M rises as high as the staves M, and Which are secured the packings H and I. Тре

cast on the tripod feet, are three inner cones or

a. On this hopper are three equidistant seate, i, on which rest the legs of the tripod U, which supported by three ribs, h, resting on the ring an annular curtain or hopper, 9, stiffened and tral portion of settler bottom is furnished with rent of liquid in the settler. The upper cenoff, so as to have the shape of the induced cur-The upper part, f, of the muller is rounded

tween the cones F and G, rubber packings, H and I.

ing between the bottom A and cone F, and be-

tion of the bottom A, rest two cones or conical rings, Fand G, one above the other, there be-

Upon the sesting l, formed on the upper por

spindle R. In the upper part of each leg is cast an opening or recess, k.

carries the upper bearing, D, of the muller

of the settler; Fig. 2, half plan looking up and looking down; Fig. 3, a section of the settler Fig. I of the engravings is a vertical section

muller.

diluted pulp is deflected upward by the curved sides of the settler bottom, and then turns downward and flows toward the inside of the ter passing under the muller B, the current of

diluted pulp. Diewano bas mentum, driven under the muller -out nwo sti bas b sction of the ribs from the outward, bas rellum edt reh have the same gen-eral form as the

The muller-ribs radially outward. tler in small jets water into the setgaidsaw adt egrado open close to the bottom and dis-Треве pojes emall, radial boles, the settler by. 32 dollow ring a into flows out from this Тре washing water eight plag-holes, b. or more of the led through one

Publishers

ings of which are given on this page. improved construction and operation, engrav

SCIENTIFIC PRESS Patent Agency a settler of

An Improved Settler,

the pulp is, by the and after diluting of the muller B, indraft or suction small holes c, flows directly into the 194aw Buidsaw edt tation. The pulp being drawn in unor ai si a rellum agal pump, and act ·littaes a to sebald

Fraudalent Mining Sales.

the condition that all markets get into after they have suffered from a boom. It is difficult to sell anything there, and there are plenty of men who curse mining as a risky business sim-yl The St. Louis mining market is getting into

they have suffered from a boom. It is adfilted to sell saything they have suffered from a boom. It is adfilted to sell saything there, and there are plenty of they have suffered from a boom. The is difficult west many to sell saything there, and there are plenty of they because they have made some foolish investments. It makes no difference whether and mentaly they have made some foolish investments in the resent confliction of affairs and meritorious mining profects.

The reason for the present confliction of affairs and meritorious mining to feet.

The reason for the present confliction of affairs and meritorious mining to feet.

The reason for the present confliction of affairs and meritorious mining to feet.

The fool who have the mere the there are the track of the track of the creatily of the can be be found in the asset of wildcast property and the sales of wildcast property and the sales of wildcast professor, and there are no casminated mean in present conflowed the same and the sales would call the same are the same in the sale will be fortunate, will be fortunate, while the fortunate, while the fortunate, while the fortunate, will be fortunate, while the fortunate, will be fortunate, while the fortunate, will be fortunate, while the fortunate, while the fortunate, will be fortunate, while the fortunate, will be fortunate, while the fortunate, while the west such or sales are not sent to both without they will be fortunate. It has been and when the public fuel says the entire way, and it is a said when the public fuel who way for the mining both without the work of the mining the sales were such as a risky business. The many fortunate thing for the will be fortunate, while the ways the contract that the work of which will be fortunate, while the ways the contract said reason cause every one to the work of the work of the work of which are the work of the work of which will be fortunate. It was a risky business. The mining how is a risky business. The work of the work of the work of the work of the wor

Ace a number of fine leads, and quites a number of the leads, and quites a number of a number of a number of the leads, and quites a number of men are working them in the interest of a St. Paul company, who are spending some the number of them are a noney in development work. J. M. Moddams, W. H. Thomas and Chunkey Johnson all have broadeds here and some of them are fair prospects.

A few miles further down on Ramahorn, A few miles further down on Ramahorn and payed and payed and payed and properly a secount of they have shipped quites a secount of \$50 per ton, and they will, they ship to Omaha. While of course this is account of \$50 per ton, and they will, they ship to Omaha. While of course this is account of \$50 per ton, and they will, no doubt, when sufficiently developed to justify, no doubt, when sufficiently developed to justify, on doubt, when sufficiently developed to justify, on doubt.

Sull further on, we have Hall Broa and suches. Sull turther on, we have Hall Broa and sonese.

We have the Mobies mine, sold last spring to a week the Mobies mine, sold last spring to a week the Mobies mine, sold last spring to \$890.

We have the Mobies of the Sold last springite of the Sold of the Mobies of the Sold-mill with the as a lo-stamp free mill on the property, but the as lo-stamp free mill on the property, but the as lo-stamp free mill on the property, but the mey coint and will put in a gold-mill with state of the concentration. They are spending a lot of coint in getting their mine in the sold-mine will be able management of O.S. Batterman, formerly of Head-Center mine of Arizona. Having had years of experience there, he will no doubt be able to place mine of Arizona. Having had years of experience the mine in good abape, and, although their the mine in good abape, and, although their their small, if once opened and everything in shape, no difficulty should be experienced in making it pay, as it is not loaded down with making it pay, as it is not loaded down with wall pay dividends.

Woble mine, operated on business principles, ions and if their the country. It is run by a miner black in the country. It is not by a miner's consit oreek, has the neastest little free from the black of the has eld-feet tall which plant in the country. It is run by a miner's curbine wheel and he has eld-feet elam plant is only working one; from two gives there, but is only working one; from two of them he is doing well.

## The Gold-Belt Fizzle,

See 3.5 gold. Three form an measurement must be them the turns the turn of the special section of the second of the special sections of the special sections and the turn of the special sections of t

On Mill Creek, and on Wisconsin Creek

Still further on, we have Hall Bros. and

Head of Brown's Gulch,

be materially reduced. It has been the expertable made about the the same time. Prof. J. H. Davey ence thus far, in the Chemehnevia range, that the veins widen and increase in value as greater depth is a tailerd. The development of prof. The development that have been made in uncovering these development in these mountains from the vest of made in uncovering these development of the vest of the relations and are one of this property on the value of the vest of construction, and the profit of the violence of these of the vest of EDITORS PRESS:—The discoveries that have been made in the Chemehuevis range of mountsivendemedd to setis-llim bas soulm We admit, unindersed, opinions of cerrespondents.—Ens

The Quartz Interests.

getting down to water level, and on account of City have not yet proved as profitable as wished for. The leads worked up at the head of Alder guloh in the Summit district were given up on [From our Correspondent, R. G. Hustow.] The quartz interests in and around Virginia

all the attention and these have been given the convenient to railroad facilities have a strateded all libes attention and these have been given the go-by.

The Bell mine, the subject of a long-winded litigation, was settled at last term of court, and its moven and a set least term of court, and litigation, was settled at last term of court, and company, are still sinking on their mine, into the following the still sinking on their mine, into the following a still sinking on their unite, into the following the property is company are very close on the information question, but, of courted, that is company are very close on their bills. A recent cleanup was made public. They their bars are worth, so a banker in formed me, about \$5 per onnes; the only 4478 on on ore from the Alameda, and cleaned up 4478. They will not be able to keep their plant runtormed me, about \$5 per onnes; the only 4478 on on ore from the Alameda, and have a lot of the culty with this property is the narrowness of it. They will not be able to keep their plant runtor of the Prospect mine from Messra, Layfor, Kide and it in Butte, they will have a good lease, vell more on it, and have a lot of fine ore, vell mine in the stand part in the results obtained in Butte, they will have a good lease, we keep them running their mill mells onto the oregone of the oregoney arrive as the results obtained in Butte, they will have a good lease, we keep them running their mill mell they have mine in Butte, they will not be seen the compensure their mill mill in the hear mine in the supplept a small quantity to Butte and realized the plant in the supplement of the result of

getting down to water level, and on account of the baseness of the ore, there were not plants in the country capable of reducing that class of one dismartled and removed to other properties in places located more one or properties in places located more one or or the ord tree was properties in places located more all the arms of scilities have attracted all the detection and these have been given the go-by.

This work has been carried on by a small

large deposits of valuable metals has been watched with interest, and the progress noted in the columns of the Miniuc and Scieurific

sine during the last three years in uncovering

[From our Correspondent.] Mining and Milling Company.

**CORRESPONDENCE**,

company of early states that the contribution of the contribution

when the confinement and pleased should not a but the velocity of a hard-down, cannot remain so but for a short time. The mines adjacent have an abundance shut-down, cannot remain so but for a short time. The mines adjacent have as about dance of rich ore in eight and but a short time before operations cassed the Manhattan mill shipped \$50,000 worth of bullian. The indebtedness the amount and value of the property. As expressive of the intrinsic ment of the property. As expressive of the intrinsic ment of the property men, would be only too anxious to be permitted to worth in the mines and sake out their mitted to worth in the mines and sake out their as is evident from the activity of the managers as evident from the activity of the managers are evident from the activity of the managers and owners in the matter of adjusting affairs attentions.

ecction.

In the southern extremity of Mye county
there is every symptom of a genuine land boom;
where is every symptom of a genuine land boom;
many hundreds of scree of land have been applied for and taken up, and several parties have
been active in preparing to meet the boom, inordent to the completion of a railroad through
that section from Salt Lake, to connect with
the Southern Pacific. There is hardly a doubt
but what the work of constructing this road will
soon be commenced and pushed through with
vigor.

is of the old-fashioned style and to the smalgamating funes of an actonishing silver ring.

It is certain that Ophir canyon will be soon
better known as Boom canyon, for the recent
greatest encouragement Mye county has received for a series of years. The discovered
ledge is six feet in width and of fabulous richness. Mr. Oliver, superintendent of the Ophir
property, has shown his capacity to handle a
property of such magnitude, and to his auperior
property of such magnitude, and to his auperior
property of such magnitude, and to his superior
ability is Mye county indebted for its present
prosperous indications, for now, no doubt,
prosperous indications, for now, no doubt,
others will imbibe confidence in the merit of the
mines of that section.

Union district, which in years past has produced millions, and about which we have frealiets are daily expected to arrive at lone for
talliets are daily expected to arrive at lone for
section.

In the southern extremity of Mye county
Li the southern extremity of Mye county

is of the old-fashioned style and to the smalising. The music of the mill stamps at Belmont say the least, very flattering. The mines in the eastern part of the State never looked so prom-Throughout the entire State, says the Esmeralda News, the prospect for better times is, to

Prosperous Outlook in Nevada.

preparatory to a speedy resumption of operations, a diversity in this State there has been, and is now continuing, a steady increase in valuation of all kinds of property.

There is more land under cultivation, more fine actoring actoring actoring larger crops of fruit, hay, grain and vegetables, and the mines are showing this condition of things is certain to attract the actoring larger crops of fruit, hay, in more over of good pay graeds that ave before. This condition of things is certain to attract the actoring of condition of things is certain to attract and regardles, who, in these days and he actoring of condition of copies and the condition of copies and the condition of copies and anothing over the actoring beautiful of the constant visitors of Candelaria. They return loaded with merchandise for Monderuna, reauth productions, and tind no difficulty in making ready sales at astistotory prices. They are presented their washing consulty with wagons laden with their yearly remore productions, and tind in difficulty in making ready sales at satisfactory prices, and money is not so scarce; even the boys who have treasured their hard-earned accumulations and money is not so scarce; even the boys who have treasured their hard-earned accumulations and money is not so scarce; even the boys who have treasured their hard-earned accumulations and money is not so scarce; even the boys who have treasured their hard-earned accumulations and movel in the many is an extended the part hard the boys who was the movel them as though the shining luce has

around a center has a tendency to move one. of warm, moist air. This is notably so in the the northern boundary of the United States,

there is then nothing to keep up the ascending xperiences is not sufficient to cause rain, and drawn in becomes dry, however, the cooling it when it is cooled by ascending. When the sir A storm thus formed continues as long as the air drawn in is sufficiently moist to give rain,

Coast. Peared.

We are now in a position to take up the correspond which there is not time to explain, currence of storms and rain on the Pacific its responding that the storms are represented in the corresponding to the corre

ary, but is swept onward by the movement of A storm thus formed does not remain station.

the storm moves in that direction. For this rea-son it is found that storms over the ocean tend

ment becomes strongest there, or the center of

the sir is most moist. In this case the heaviest rain occurring on that side, the upward move-

storms tend to move toward the side on which

other words, to bring the center of the storm to that point. For a somewhat similar reason

censional movement greatest at that place, or, in

the storm. Being thus forced up, it is cooled, and the rain thus formed tends to make the as-

become of beorot si si egast nistance and thick to retaes of total awarb si it as egast eff tovo

range; since the air on the side of the storm on

ample, a storm is drawn toward a mountain distribution of moisture around them. For ex-

of the land over which they pass, and by the

APPROACH AND PROGRESS OF A

7 a. m.

'988/1 '92 Alenue

THAHO

~<u>@</u>

cuse borne.

the air in which it is, just as an eddy in a stream moves onward with the current, As

tions, an upward movement of the sir, with rain and winds blowing spirally around the conter. Thus, a storm is simply a great eddy center with an increasing pressure in all direcoharacteristics being a low barometer near the

ward. Thus the beromoter near the ascending A storm thus formed continues as long as the outenance of this ontward tend.

A storm thus formed continues as long as a long as the continues as long as the continues as long as the continues as long and we have a fully-developed atom, its

Causes of Rain.

[An address prepared by Lleut. J. E. Maxfeld, U. S. Signal Service, for the meeting of the State

understand the process by which this invisible moisture becomes rain, a knowledge of its natwhich is at all times present in the air. Of course all rain comes from the moisture

are is necessary. If there be a little water introduced into a glass vessel from which the air has been ex-

liquid etate to that of a gas; from visible moist-ure to invisible. If other small quanstantly. Its presence, however, can be detect-ed by the presence it exerts upon the sides of the vessel. It has simply obanged from the hausted, it will seem to disappear almost in-

ficiently, as in the case of the vapor in rain, it is only necessary to cool it sufvapor, and that this vapor may be turned into the form of clouds and eldisivai as es ris edt otai gaisesq si is constantly going on; water from the coerns, rivers, lakes and the earth itself noitsroqave to second sidt evatten ni then requiring considerable time. Now, have evaporated instantly, the process ton bluow beaudoutai retaw edt tadt containing perfectly dry air, the results would have been the same as in the case of the except the more it is cooled, the greater the amount of water. If these experi-ments had been made with a vessel ,bas nisge resqqs of saiged retew ed: If the vessel now be cooled, perature. as invisible state, and that this can are the temlearned that a given space will hold only a certain amount of moisture in andT .seair ernperature rises. Thus assume the gaseous state. If the ves-sel now be heated, the water remaining will gradually evaporate and disappear duced remains as water and does not a time, will seem to disappear like the first, but after a time the water introtities of water be introduced, they, for

this cooling may be brought about.

Air is cooled by mixture with colder There are a number of ways in which the glass vessel,

air, there we find rain, and such a current is believed to exist near the center of all storms, and to be the immediate cause of the formation and waintenance of them. turned to water. Thus, whenever we find a strong ascending current of moist gaied at has been cooled and is being means of an sir-pump, a mist is seen to gather, showing that the invisible ing moist air is rapidly exhausted by sion of air cools it may be seen from the fact, that when a vessel containdiminished pressure, expands, and con-sequently is cooled. That the expansome distance above it. In this case the sir as it rises is brought under ap from near the earth's surface to done only when air is forced or drawn large mass of the air must be suddenly cooled, and it is believed that this is ably never bring about more than thin a clouds, fogs and dew. To give rain, a causes act so gradually that they probair, by contact with the cooler earth, or by simple radiation; but these

consequently circulates around the ascending current with a spiral movement before it reaches the center and ascends. Now, just as a the earth on its axis, is constantly deflected to the right in the Morthern hemisphere. The air in straight lines, but, owing to the rotation of other air is drawn in from all sides toward the ascending current. This does not move inward To supply the place of the ascending air, air at the same level. Consequently the upward movement is thereby strengthened. keep the air in it warmer than the surrounding mation of rain in the ascending current tends to as we have seen, and, if the air be moist enough, rain falls. Now it can be shown that this forthe surrounding sir, it, from these very canses, becomes lighter and rises. In rising it is cooled, surface becomes warmer and more moist than

we say signification as the solution of the second of the solution of the solution of the second of over the ocean being warm and that over the ing air, the conditions are favorable for the birth of a storm. Now, in winter we get just birth of a second contrast to temperature, the air the six that the second is the second to the second the second to the second the second to the sec -banorane adt nadt telom erom bas remraw si ris we have a great many storms some in at that point. Secondly, it has already been stated that whenever over a considerable space the

it is found that all over the globe the frequency of storms increases as we go north from the equator into middle latitudes. As a result of equator into middle latitudes, as a result of that stores occuses, it is found, as already stated, that are not a stores in the state in the state of the state is the state of t

ourrent. It oesses, the air is no longer drawn in from all sides, and the storm has disap-

the atmosphere in the middle latitudes has a they do in other parts of the country. We general movement to east, aforms generally have already seen that storms tend to move from west to east. The direction of their! toward the side on which the air is most moist. Storms onme in from the west here as

short distance into California, giving sar of the northern part of the a vice and it is the state of t extends beyond the southern boundary of the State. At other times when the aetorm travels southward until it often the Sierras, they are forced upward and cooled, giving clouds and rain over the State. Thus, the effect of the to Total bas egash Read later of are thus drawn in from the ocean over the land, and as they meet the mounta south wind, and as the storm moves a little to the east this becomes a southwest wind. Great masses of air gaivig, emrots edt brewot awarb si rie California when a storm appears off ni ecalq sesiat tanw ta consig au te.I originate on the coast north of Cape no ni emoo emtote uno lo lia giusen

I H

rometer with increasing pressure in all 26, 1886. Here we see a storm just appearing near Cape Flattery and marked by the characteristic low bachart was made, Chart I represents the conditions at 7 A, M. on January edt dours of the time for which the midtiw nellal asd to gnillst ai niat etekw inches. Similar lines are drawn for 29.8 inches, 29.9, and so on. The shaded portion of the chart indicates T.es he barometer stood at a hight of 29.7 I means that at all points on that line tometer stands at the same hight. Thus, the line numbered 29.7 on chart ed ent eredw staiog dynorid awarb The curved lines are isobars or lines of a storm down the coast as described. noisnetxe bas eoastseqqs edt zaiwods There are given herewith two charts

winds which are found on the west by the olear weather with northwest moved eastward, and was followed show that this storm finally Charts shaded portion of the map. as will be seen by reference to the some distance south of San Francisco, northeast, and the storm had extended directions. Rain had already fallen as far south as Southern Oregon.

Chart II represents the conditions eight hours later at 3 r. m. Here the storm center had moved a little to the

onioe of a storm.

Daring the winter season storms affinite to the one shown follow each of the totable and the morpher coast of the storm of the st

tervals of clear weather. tendency days of disappess when the been states of disappess when the coast. Othere, as has been stated, extend beyond the southern boundary of California, and often hang on the coast for week or more before passing away. These conditions give, as we know, almost continuous ditions give, as we know, almost continuous trains along the coasts of Oregon and Washing.

To Territory, while in California there are intervals of clear weather.

carrying capacity was 1,500,000 feet. which, in December, 1880, brought into this port a cargo of 1,400,000 feet, Est into San Francisco was by the ship Olympus, THE LARGEST LUMBER CARGO ever brought

Co. is 700 feet long, 50 feet wide, and capable of storing 16,000 tons of ice. The company employs about 200 men. The mill cuts over 1,000,000 feet of lumber a month. THE new icehouse of the Bora Mill and Lee

ummer. In winter, however, these conditions do not secending, consequently there are no general asterms and little rain on the Pacific Coast in than counteracts the cooling it receives in ceives from passing over the heated earth more cooler sir from the ocean is drawn in over the land and forced to secend, the heating it redo not reach the coast, and in oases where the eun, and storms coming from the west are drawn away by the moister air to the north and Whenever the air over a part of the earth's concession, however, is greatly modified by Now, in the summer the air over the Pacific Some pass east or dissipate without the without extract becomes warmer and more moist than other things, most notably by the topography Slope is rendered very dry dry the heat of the tending down the coast. Others, as has been sentrounding air, it, from these very causes, of the land over which they ness and hy the coast, of the land over which they ness and hy the coast. TEACO DITIDAT EHT NO MAOTE 3 b.m.

January 26, 1886,

CHART IL

exist, and storms come in upon the coast un-impeded. Some, without doubt, originate im-mediately upon the coast. More than nine-

bullet attached to a string exerts a pull on the to follow the course of the great warm ocean our help and as the Japan currents, rents, because there they find an ample supply and as the Japan currents strikes the coast near tenths of these storms have their center north of Cape Mendocino. Three rescons may be given for this. First, we have seen that storms

## The California Mines.

er-bed operations, due to such prolongation somewhat curtailed. But this shortage will be nearly made up by the increased product of the bullion output from that source is bei ing to such insufficient water supply, and thus to run short time or shut down altogether owmore central mining districts have been obliged class in California. A good many mills in the tor their motive-power, now quite a numerous miners as depend wholly or in part on water greatly ravored river-bed operations, it has worked to the disadvantage of such quartz mountain streams, which as a consequence reshough rain to sensibly increase the flow of the Not as yet have we had, the present fall,

field, it is observed that new reduction industries have undergone marked expansion of late, none have experienced a more solid growth than this branch of mining. Looking over the yielding everywhere satisfactory returns and making uniform gains. While many other the one business that moves steadily forward, si sletem succeeded tor the precious metals is tory, favorable reports continue to reach us, From all parts of our mineral-bearing terriof the working season,

Some new ditches are being built to serve for both mills and smelters, are in good number being erected, nor of late have operations at more than a few of these works suffered sus-

superabundance of rain, would assure to all our leading interests a continuance of their present tillers and the miners. A wet winter, with no The advent of the rainy season, now fully due, is awaited with some anxiety, and its arrival would be heartily welcomed by both the landpecting continuing active in the newer districts. irrigation and mining purposes; new mines are everywhere being opened, the business of pros-

## The Leaching Process.

sective and prosperous condition.

In Old Mexico, New Mexico, Wevada, and in fact in all the States and Territories, these Slowly but surely the advantages of working

leaching works where formerly there were no tents to this process. There are now dozens of any other manner yield up their precious conproven what can be done. Oertain classes of or which cannot be beneficiated profitably in this idea has been dissipated as experience has cated and expensive to answer very well, but ation process are being recognized. It was at first thought that the process was too complicertain classes of ores by means of the lixivi-

be treated by the Russell lixiviation process. mediately put up at Deadwood, where ores will of the reduction of a vast body of low-grade ores at a profit. No doubt works will be im-It is thought to definitely settle the to give a great impetus to mining operations. ful that it has brought rejoioing to the Black Hills miners. It is predicted that the fact that this process will work the ores there is destined at Beowawe, Mev. The result was so such works are in successful operation. Recently some ore from the Black Hills, Dakots, has been tested by the leaching process

tion of a union at the latter place. No Grass Valleyans were present at Michell's hall Satur-Grass Valley with a view to securing the forms. by-laws was appointed, as was also a committee from of five to confer with a like committee from secretary. A committee on constitution and wages here at three dollars a day. A temporary organization was effected by electing John Toward as president, and Leonard Foote as miners' union for the purpose of maintaining a mrot ot tnemesrya edt ot bengia erew III Michell's hall Saturday evening in response to the call published in this paper. The names of ber of miners of this district sesembled at THE MINERS ORGANIZING.-- A large num-

in Utah, 100 miles south of the terminus of the Utah Central railway, with which it is connect-ed by a well-equipped daily stage line. SILVER REEF is the southernmost mining camp day vight. Another meeting will be held at the same place to night.—Nevada Pranscript.

THE Chambers Syndicate mines, Butte, have go about \$40 per ton are now on the dump. liw tant ero to sant 20 tond A. gaissergorq si WORK on the Buckeye mine, Como district,

resumed work, giving employment to 200 men.

bly, too, they hope to gather some gold meanbeing on the ground early next summer; possiing, while they will enjoy the advantage of they save the expense of going out and returnmines, intending to winter there. By doing so

her mining industries. unfavorable conditions. The future of Alaska is full of interest, this being especially so with not be seriously impeded by climatic or other quartz vein there be found, operations need perienced. Even in the distant interior, should the exigencies of the occasion as they arise. With vein mining, fewer troubles will be exshifts to which he will have recourse to meet placer miner a hard one to solve, and it will be curious to observe the many devices and make-This Alaska problem is going to prove to the

## A New Deal With the Fossila,

wonld seem to fall especially within the prov-Formed for the advancement of science, this work fitly committed than to the above association in the direction here suggested no one can doubt; and this being so, to whom could the task of effecting these improvements be more tnemevorgmi to elditqeesus si vgoloeg to ecneic some opposition, we cannot see why its expedi-ency should be called in question. That the obsracter. Although this movement met with of geology, the undertaking of which work it was proposed should be international in its of revising the classification and nomenclature ancement of Science discussed the expediency At a late meeting held in the city of Wew York, the American Association for the Ad-

ccomplished being to make this an internacould be represented by appropriate colores it is easy to understand how much more readily these could be recognized and identified when seen. This has to some extent already been done, what remains to be extent already peen done, make this as interest. anoitamtof lasigolosg sucirav ent it bnA fenob remain equally effective, why should this not be clature of geology can be made easier, and yet and lighten his toil. If, for instance, the nomenstudent to facilitate the acquisition of knowledge learn that every sid should be extended to the nost notable features. We have so much to knowledge. This is an age of progression, greater system and simplicity being one of its to stnemtrageb rether in behavious tnem with the progress of the mechanic arts or the aidof these reforms any more than the other sciences. They are all open to improvement. Mone of them have in these particulars kept up We do not say that geology stands in need noe of such organization.

feeling by lapse of time. Their propriety and utility established, the sooner they are effected the better. ciled to or evince toward them a less friendly hence as now, nor will the fessils become reconvill seem Just as much an innovation ten years gained by delay? The changes contemplated whom the business naturally commits itself are convinced of its necessity. What is to be otion of this kind is of no validity if those to The argument that it is premature to take uniform standard in this respect. tional matter, and so insure the adoption of a

## Dues Needed.

reading of this paper ever afterward. Christmas, taxes, New Year's and annual subscription to-morrow, and better enjoy the dares tell a lie) or to his wife (to whom he never ought to tell a lie) that he is going to remit his his mother or his wife's father (to whom he never strikes ten), we hope every good subscriber who owes us a renewal has just ended a pleas-ant reading of our last issue, and is saying to the paper by writing this item (while the clock ao a se a faine a no an gaidain a se a se a se The long winter evenings are upon us all, and ing renewed and remitted their subscriptions, Thanksgiving is at hand and we want to be very thankiul to all of our subscribers for hav-

ing yourselves and ourselves happy by early you in 1888. Please double up things by makhelp us hold up our heads before creditors, and strengthen our hands to do our best work for or betas are subscribers are wanted to settlements are coming right along, and old sub

A Plant for the manufacture of zinc is being a sering daily earnings being estimated at \$8. whole of Southern California, if the claims to the manufacture of zinc is being average daily earnings being estimated at \$8. whole of Southern California, if the claims to the manufacture of zinc is being averaged at \$100 have remained in the prove to be as good as expected. THE discovery of coal at South Riverside,

The Future of Mining in Alaska.

and endured hardships such as few men have ever been called upon to undergo.
And now the most trying field ever opened nearts and strong arms they have braved dangers been the pioneers, and well have they every-where done their work, With courageous all the Pacific Coast region were opened by them, Even in more distant lands they have by Californians. Our prospectors have gone out in every direction. The first trails throughout ritory has been explored and largely peopled colonizers from the first. All neighboring terthem beyond our own borders. We have been to yosm beirrse eved stastidadai tuo to varied than she now is. But the enterprise and the only more populous, but also more wealthy voted themselves to the development of our own resources, California would have been not Had our people all remained at home and de In considering what has been accomplished by the residents of California, little account has been taken of what they have achieved or helped to achieve outside their own State.

fronts him has the Oslifornia miner ever before much time, heavy expense and incredible labor. With no such array of troubles as here con-Alaska. To reach and to work them involves to antqob ent ai eil staort diw brad banod way. Gold-fields hemmed in by mountains and oft ni baste taft seitles difficulties that lish, while it repels it by the many and all farənim bəsoqqua sti dtiw noitargimmi stqmət in the far north, vast, gloomy and forbidding, these hardy men invites exploration. Alaska,

n forced to contend.

It is not only the long, tedious and toilsome

frozen to such great depths, this condition bebe supposed; possibly bars am store is not store is not store is not store where the ground store is not store is not store in the store in the store in the store is not store in the store in the store in the store is not store in the stor to be seen. Possibly it is not so general as is this trouble can be overcome, if at all, remains margin of the auriferous ground lying next the streams can ever be worked. To what extent es greatly intensified, as only a narrow r greater depth and never thaws out, the evil ness of eight or nine feet is bad enough, but when the earth itself becomes frozen to an equal even on the swift-running streams to a thickfrozen. That ice should form on the lakes and fight with frost as well as with heat, the worst feature of all being that the ground itself is winter and the short tropical summer. forced to contend with both—the long arctic ward stand in the way that are most to be dreaded. If he has been obliged elsewhere to encounter extreme heat or cold, he is here journey that has first to be made, but the numerous and formidable obstacles that after-

The mining community in this State is ores. With silver at par, many mines now idle would be again worked. being also some game in the country, with ebarg-wol diffw senim ynam to esse edt ni fto The heavy discount takes all the profit regret of the miners in the silver-producing re-Silver still continues depressed, much to the been worked, and will cause increase of force and yield at the larger mines. These numerous drawbacks would appear to starting up some properties which have not Michigan, the three greatest copper-producers of the United States. It will have the effect of successive burnings, be removed. It is much to be hoped that this plan will be found feaof great advantage to Arizona, Montana and layer it is thought that the whole can, through The recent advance in the price of copper is gested. It dries readily to a depth of several inches on the surface. By firing this upper The plan of burning off this moss has been sug sarily limit the diggings to a comparatively narrow scope, unless, to be sure, some means can be devised for overcoming this obstacle.

to be universal or quite general, it must nec

the summer. Should this deep freezing prove

surface, which, sheltering it from the rays of the sun, prevents the ground thawing out even in

ng due to the heavy coating of moss on the

there being no malaria or other apecial caus ping only for needed sleep or rest. The cli-mate is at all seasons of the year healthy, are long, the miner can labor many hours, stopthe days in the summer, the working seas anxiously looking for rain. Many ditches are dry, and mills which depend on water-power trouble need be apprehended from them. mer. The Indians are a quiet race, disposed to make themselves useful to the whites, No mua edt ni noitstegev bevil-trons to laeb boog trying, the cold being dry and bracing. The streams abound with the finest of fish, there falling as low as 70° below zero, is not very be offset by some advantages. The winter temperature, though extreme, the thermometer

mines are eithered, extends from about the middle of June to the middle of September, not over 100 days in all. There were about 300 The working season in the interior, where the The miners at Nevada City and Grass Valley of disease, even in the summer. ti bas that tain is expected almost daily, and is a hoped when it does come that it will come in

put up in Denver, Col. district, Esmeralda county, next spring. miners in these diggings last summer, who got A QUARTZ-Mill is to be built in Palmetto are forming Unions for the purpose of maintain-ing wages in that vicinity at \$3 per day.

have had to hang up the stamps in several lo-calities. The season is so far advanced, how-

Passing Events.

sessment Notice—Nevada City Electric Light Co.

Business Announcements.

Filed Trons, SGT.

MINING SUMMARY—From the various countries
MINING SUMMARY—From the Volorado, Idaho, Montans, New Mexico, Overon, Ush, Wyomide, SSE-SS,
MINING STOOK MARKET—Sales at the San
Francisco Stook Board, Notices of Meethurs, Assessments, Dividends, and Bullion Shipments, SSS.

Lakes, SRC.

GENETYL INTRORMATION. — Ashmas in Cage
Birds; Trimming Kerosene Lamps; Peat Made Equal
Birds; Trimming Kerosene Lamps; Peat Made
Caral Boats; Cleaning Show Windows; Effect of Heat
Caral Boats; Cleaning Show Windows; Effect of Heat
Caral Boats; Cleaning Show Windows; Effect of Heat
Caral Boats; Lieaning Show Windows; Decot Boat
Walls; In Guiding Belts; To Prevent the Rusting of
Filed Irons, SST.

Engine, 328

SOIENTIFIC PROGRESS.—The Independence of Science; The Uniform Energy of the Sun; The Green Science; The Uniform Energy of the Sun; The Green Heat into Electricity, Fluorescence of Bismuth; Telesphonts Conductivity of Red-Hot Wire; Utilizing Shumps; Useful Plants and Animals; Disappearance of Starneys, Useful Plants and Animals; Disappearance of Starneys, Useful Plants and Animals; Disappearance of Starneys, Useful Plants and Animals; Disappearance of Starneys and Starn

Mines, SSZ.

Mines, SSZ.

Mines, SSZ.

Misoe, SSZ.

The Gold Belf Fizzle; Prosperous Outlook in Nevada,
SSZ Causes of Rain, SSZ. A Curious Mine; The
Mines and Miners, SSZ.

MECHANIOAL PROCRESSZ.—Some Questions
Miching Iron; To Give Great Hardness and Drobithty to
Melting Iron; To Give Great Hardness and Drobithty to
Melting Iron; To Give Great Hardness and Drobithty to
Red Breas; A Wrinkle in Horseshoeing; The Breaking
Red Streas; A Wrinkle in Horseshoeing; The Breaking
Red Streas; A Wrinkle in Gommon Steel; Asserting
Red Streas; A Wrinkle in Horseshoeing; The Breaking
Red Streas; A Wrinkle in Horseshoeing; The Breaking
Red Streas; A Wrinkle in Horseshoeing; A We Gas
Brighte, SSZ

OORRESPONDENOE, Mines and Mill-Sites of Company; Montana Uhemehuevis Mining and Milling Company; Montana

LECTRARIONS.—The Clayton and Mackie Settler for Silver Mills, SRI. Library, Art Gallery and Mechanic Arts College of the University of California, SSE.

EDITORIALS.—An Improved Settler, S2I. Fras-ing Events; The Future of Mining in Albers, A Wer Deal with the Fossils; Duces Needed; The California, Mines; The Leaching Process, S2A. California, Bock Salf. Mining Accidents; State University Building, S2E.

TABLE OF CONTENTS.

Saturday Morning, Nov. 19, 1887.

SAN FRANCISCO:

SCIENTIFIC PRESS PATENT AGENCY.

Entered at S. F. Post Office as second-class mail matter

Our latest forms go to press on Thursday evening.

Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Loudon Agent—Alfred E. Ann, 63 and 64 New Broad

Advertising Rates.

DEWEY & CO., PATENT SOLICITORS.

MINING

RESERVATION SESS.

M' B' EMEE

Office, 220 Market St., N. E. cor. Front St., S. F.

Annual Subscription, \$8. Wew subscriptions will be declined without eash in advance. All arrearages must be paid for at the rate of \$3.60 per annua. Terms of Subscription.

W. B. EWER.....SENIOR EDITOR.

DEWEY & CO., Publishers.

-64, 400 tons of carrallits were raised. The yield increased annually until 1875, when the yield increased annually antil 1875, when the production was 494,414 tons. Carrallits on potessium,

It a deposit of this obstacts should be discovered in connection with one of our great salt deposits, its importance to California and the Paoifio Cost oan scarcely be estimated.

Paoific Cost oan scarcely be estimated.

ornim edt renn benimexe even doidw emem-ecope, and found to bear out well the descrip-Mr. Hanks illustrated his essay with speci-

tions in the paper. The study of the speci-mens led to an interesting discussion of the sub-

.troqer bas acits Among the donations to the society's material Among the donations to the society's material were two specimens of distomaceons earth from William Irelan, Jr., State Mineralogiet. One was impregnated with asphalt, and was from the mouth of Dos Pueblos oreek, near Waples, in Sante Barbara county, and the other were from Shate county. The specimens were referred to Mr. Riedy and Dr. Riedy Ireland for examination and report.

Mining Accidents.

John D. Cox, an old pioneer of Sierra county, while working last week on Kanaka oreek, three miles from Alleghany, was killed by a bank caving on him. He was aged over 70

(1912) CANA DININIM (1914) The control of the contr belastaid tab each only and art works and on the balaled of the cooperated in the building. The Library building is theorested.

The style is modern Gothic. The western half of the main shoor is divided into three large reading-rooms, in which are kept a large collection of ourrent publications, and the mooms are also and the rooms are also also and the rooms in western in the intervals are also used by students in the intervals between their recitations or lectures. The between their recitations or lectures.

COLLEGE OF THE UNIVERSITY OF CALIFORNIA.

onoidudatent ond or

viere of the University of the desirement of the contract of t Joseph C. Rowell, a gradlevy is in an advanced by spiral staircases. The main floor is well filled with books, the first galfloor, which are reached tunds has two galleries fand the the main study, highly appreciated by the students. The roadapted for reading or flew secalq beriter-wob -niw a dtiw evoola yzoo a gaim to ried dose ,lisd tier, circle around the ty proper. Handsome walnut cases, tier above erdil edt si doidw sbaut shown in the engraving. The eastern side is a re-

western side is the one

ance being provided by State appropriation. Mr. Bacon also made valuable donations of books and art works which are duly installed

We give on this page a view of two of the prominent buildings of the State University at Berkeley. The large building in the foreground

State University Buildings.

Cavagnaro. The fourth man was fortunate enough to escape without even as much as a

sinking more holes to obserge with powder and explode. In the course of their work they struck upon one of the unexploded obstrees, the previous shift, when an explosion took place, shookingly mutilating three of the men Altoheel Cogen, Charles Sweeter and Micholal Cavagnarto. The fourth man was fortuneted.

explode. Ignorant of the state of things, the new orew went to work with a Burleigh drill

ed half the funds for its erection, the balis the Bacon Library and Art Gallery, taking its name from H. D. Bacon of Oakland, who fur-

ing. It has several notable pieces of statuary or room for and plenty of room for an art treasures which may herested be given Thomas Kennedy, a Best and Beleher miner, the side of the building shown in the engrav-The Art gallery occustate of cocupation, and states of cocupation, and the upper gallery is reserved for future growth of the library. At present the collection. The librarian is dosept C. Howell, a wind-

The low building at the rear is also divided between the two smillsted colleges, the souther orn half containing most beautiful machines for precise measurement for testing the strength of materials, etc., and the north has a full mining outfit with rock-ornshers, concentrations, after the strength of Ingute De expected, the visitor who enters the lathees, lower floor finds on one side rooms with lathees, planers, forges and steam hammers, on the other, rock-orashers and the various parapheralis of assaying. The motive power is further exact. Students in these departments do actual work under the direction of instructors, and manifest much interest in it. The upper and manifest much interest in it. The upper doors of the building furnish space for lecture.

Tooms for mechanical drawing and the like and offices for the professore,

of Prof. Hesse, and the north half by the College of Mines, in charge of Prof. Christy. As might be expected, the visitor who enters the

granite. The building is divided laterally into two portions by the halls, the south half being occupied by the College of Meschanics, in charge

The building upon the left of the engraving is the Mining and Mechanic Arts College, a fine solid structure of brick trimmed with

have thus hastily mentioned are well worth a visit from all who take an interest in the progtors, etc.

The departments of the University which we The departments of the University will worth a

in the drift at the time, and when these went on their regular shift, the crew which they re-lieved failed to report that some of the charges of grant powder which had been put in failed to ress of general and technical education. owned by Haggin & Tevis, on San Domingo oreek, between Murphy's and Sheep ranch, last week, in which three men were seriously and perhaps tatally injured. There were four men in the definit or the time of and when these were four men in the definit or the time of and when these were the second and when the second in th An accident occurred at the Calaversa mine,

bas deeh to sasm belgaam eldezingcooran as

quiokly that he was unable to obtain a hold and went to the bottom, where he was found,

walls of the shaft at every point, and into a hole in the flooring on one side the unfortunate man stepped and grasped at the planking, but iell so

Dougherty was standing on the staging, which, being a temporary structure, pains are not standard to fit the planting closely to the temporary at the planting closely to the

by the name of Dougherty, says the Calaversa Chronicle, was instantly killed by falling down the sheft, a distance of 700 feet. As we understand it, the main shaft was being retimbered, and, as a matter of course, staging was constructed and removed as the work progressed.

Dougherty was standing on the staging, which,

A miner working in the Sheep Ranch mine olean out blast-holes, and it plowed along his thigh and into it for a distance of about 10 inches, inflicting a painful ragged wound.

dropping his weight to the ground, he ran his thigh against an iron scraper which is used to

as he stepped lively from the bucket, slmost

was severely hurt in the winze sunk below the 1300 level in the north drift. He had just been lowered to the bottom of the winze, and

## SCIENTIFIC PROGRESS.

The Independence of Science.

We have before us simply the facts that hat a facts that have presents; our task is to see these in the most rational order possible, knowing well that, however enlarged our knowledge may become, a perfect interpretation of the facts will forever to:

To beyond our reach. Whatever view, therefore, may at any moment best colligate and harving monize the phenomena of the universe, that view—if we are going to concern ourselves with Vivine plans—we must regard as most nearly view—if we are going to concern ourselves with tevesting the Uvine plan. But to allow our interpretation of the phenomena to be overborne and controlled by any a priori conceptions, and controlled by any a priori conceptions, as Mr. Curtis seeks to force upon us, of the Uvine plans and attributes, is simply to abandon so so account and attributes, is simply to abandon so so account and sets the order of the abandon so so and a standard and attributes, is simply to abandon so so account and sets of the abandon so so account and sets of the consecuence and sets of the season of the sets of th

Divine nature and attributes, is simply to aban-don scione don sciones and done scioned and actributes, is simply to aban any deficiem.

Now, to be quite frank, we don't believe that any theologian is one bit better a judge of the any theologian is one bit better a judge of the mancely emperior burnant aculties will work. The merely emperior burnant aculties will work. The child cannot understand the mind of its father, actions. The most stellar own experience, and cannot see the mind of its father actions. The most stellar of the stellar own experience, and cannot see the mind of the father actions. The most stellar of the stellar of the most indeveloped minds to comprehend the workings or appraise more ridioulous, everlaint probling or appraise in the stellar of the most of the most order of the most of the most order of the properties of the distribute petween the most unit of the statucke problem of the father of the most unit of the statucke of season to interpret for us a Suculy, then, it is not without good reason that the leader conditions, or interpret for us a Suculy. They is and that mind which the processing to be conduction that the most unit orided on conducting their vesserches in entire independence of all theological assumptions. Degin to draw deductions from they begin to draw deductions from the neutron being to draw deductions from the science itself becomes a mere aborted appendage seions closes to have scientific validity, and that is not conducting the sucul the science itself becomes a mere aborted appendage to have deductions the science itself becomes a mere aborted appendage stelence itself becomes a mere aborted appendage.

The Uniform Energy of the Sun.

The Unilorm Energy of the Sun, the sun, Tries unilorm Energy of the Sun, the sun has been giving hears the sun has been giving heat are the sun has been giving heat and light to the earth as at present, possibly with some ocusiderable fluctuations, and the sun considerable fluctuations, and the yearth with some not very small progressive variation. The necords of sgriculture, and the natural history of plants and animals within the last 3000 desars, but for all the necessary of the sun's heat and considering that the intensity of the sun's heat of or the sun's heat of the sun's heat there may have been variations of quite as much as 5 or 10 per cent, as we may judge thom one identificating that the intensity of the solar radiation to the earth is 63 per cent greater aguator not in the northern or southern hemitian January blan in July, and neither at the equation to the earth in solutions of any kind. But as for the mere age of the sun, irrespective of the question of uniformity, we have provided by of the question of uniformity, we have provided by sometimity of like on the sarth in time peat for continuity of like on the earth in time peat for continuity of like on the earth in time past for tens of history, with its irrefragable avidence of constinuity of like on the earth in time past for tens of history, and probably for millions of years in the one of the intensity of the or the sarth in time past for the one of the sarth in time past for years in the or the sarth in time past for years in the or the or the past for years in the order of past and probably for millions of years in the past of the order of the sarth in time past for the or the order of past of the order of the sarth in time past for years in the order of the order of past of the order of the order

Here, then, we have a splendid subject for contemplation and research in natural philicaton of dead matter in contemplation and research in natural philicapolpy, or physics, the science of dead matter at the subject of the moder at edimensions which we know it to have, a dedimensions which we know it to have, brounded all around by cold ether, has been done seventy-six thousand million million million million million million million million poster, and as possibly nore, and est possibly for a few million years, and to physicist who is not engaged in trying to answer it can have any other justification, and no physicist who is not engaged in trying to answer it can have any other justification than that his thing to mence science any other million subjects of the physicist of the service of the service of the subjects o

THE CREEN SEA OF THE CORAL JELVAND.—Prof.

W. K. Brooks, who socompanied the scientific of Johns are to the Johns to the Johns to the Johns by the Johns to the J THE GREEN SEA OF THE CORAL ISLAND,-Prof.

form used for the same purpose as native copper, both for implements and ornament.)

Dr. Andree thinks there is no reason to believe that the tools employed in the great masonry work of Perr, such as the trainmance, were others than those in use in the rest of Peru, which were the champi, a species of bromso. The chiesls found in Peruvian graves soon become burnted when used on the hard strut; but it is suggested that there was some method of sharpening them essily. Indians have certainly worked a hard stone like nephrite with out iron, and there is no improbability, says out iron, and there is no improbability, says were employed.

Were employed,

MEW METHOD OF MELTING IRON,—A new method of melting iron has been devised in Germany. The cupols is supplied with blast blasts, or the other, bene of the other, there is the form of a vertical slat, and are directly with the form of a vertical slat, and are directly connected with a tuyer ring. The particular slath is that the form of a vertical slat, and are directly winch a slath, and are directly connected with a tuyer ring. The particular slath in the form of a vertical slat, and are directly openings, the cupols is that the bottom is a slightly inverted arch, which is the computed sareh, which is the cupols which be the dead of the cupols is that the underly one and the cupols above, the cannot be a seaso fine above the connected downward from the cupols above, the cannot be used by directly charter for diasolving it, or pushed into the bath for diasolving it. Of course, considerable quantities of sorap can be used by directly chartering an ordinary cupols, but it is claimed in this case the advantages to mead by directly chartering and a sused by directly observing it. The state is a sused by directly chartering an ordinary cupols, but it is claimed in this case the advantages put it is claimed in this case the advantages purer description of metal.

To Group of metal.

To Give Green Hardness and Ducklity to red description of makes an alloy which gives great hardness and ducility to red dress, and outsility to red dress, and ducility to red dress, and ducility to red dress, and ducility to red dress, a without having recourse to phosphor drones, a mixture of green bothle glass is recommended to be added to the other metals. To this end a say to a 50-pound or noishe charge, or two per cent, care being exercised to place the whole duantly of the glass is the bottom of the ornoiders, and the two per care, care being exercised to place the whole has a place of the glass at the bottom of the ornoiders, and the top. The drass for bring the other metals are on the top. The case obtained is exceedingly hard, and is not which purpose borings, flings, etc., can be used by which advantage. If the above alloy is to be used for parts of machings, etc., can be used one per cent of machings, etc., can be used one per cent of machings, to be used or getting of manganese should be maken on the proofed. To one per cent of maching hard, and to be used of place grained. Forous castings become almost and close grained. Porous castings become almost any when cast in green sand.

A Weinkle in Horseshoeder. If Gettings are only like a said of the said.

A WEINELE IN HORSESHOEING,—In Germany, the smith, when finishing the shoe, punches hole is cold, he taps in a screw thread, and, when the shoe is cold, he taps in a screw thread, and such such shoes the first of the horse can travel as a sarey-pointed stud of an inch in length, and with shoes thus fitted the horse can travel serews into the worst possible road, and I have never known one slip either when riding or a preventer known one slip pither when riding or diving; and draught horses are shod in the same way. When the horse comes home to as a same way. When the horse can creamage can and serews in a button, so that no damage can papea to the horse, and the serew-holes are prevented from filing. When the horse is good prevented from filing. When the horse is good the horse coming back with horders is no iest of the horse coming back with horders is no iest of the horse coming back with horders have is no lear with a suffice of the horse coming back with horders is no iest of the horse coming back with horders is no iest of the horse coming back with horders is no iest of the horse coming back with horders is no iest of the horse coming back with horders is no iest of the horse or sipping in all directions.

THE BERAKING OF STEEL.—The fact is familist to metallurgists that a steel which is very faithle when cold often breaks at the blue ancestible when cold often breaks at the blue ancestible when cold often breaks at the blue sense in a selfect. It appears to be defect. It appears to be defect, it appears to be considered that the workmen in the Ural pears, however, that the workmen in the Ural pears, however, that the workmen in the Ural has been so often observed the same fact. It has also been found on investigation that the metal in two often observed the same fact. It has also been found on investigation that the metal in would seem to explain a large number of sections would seem to explain a large number of sections would seem to explain a large number of sections of orders, as, for example, the breaking of tires under the action of brakes, and the fracture of under the action of brakes, and the fracture of order orders, as, for example, the bracking of tires orders, as, for example, the bracking of tires orders, as, for example, the bracking of the same bracked as the constant of the section of machine arbors, which become non-dear and of machine arbors, which are measured as a section of machine arbors, which become non-dear and the facture of the arbors, which are commenced as a section of machine arbors, which have measured to be a section of machine arbors, which are arbors, which are a section of machine arbors, and the fracture of machine arbors, and the factor of machine arbors, a

BESSEMER AND COMMON STEEL,—The difference between Bessemer steel and crucible steel in made from between Bessemer elseel is made from bar iron, while crucible steel is made from bar iron, which is first comented in chartence, which are afterward bested and rolled to the size wanted. The cementation in charcoal is done to charge it with the proper amount of carbon.

A New Gas Exerze is being put on the market in England ander the name of the Elland Silent engine. The mechanism is said to be exceedingly simple, the results obtained being excellent. It has an ignition at every revolution, instead of at every two or three revolutions, as in the Otto and other gas engines,

## MECHANIGAL PROGRESS.

Some Questions About Steel,

Some men who have been successful steelavorteint of the decision of the successful steelorder point of the successful steel of the successful stee

Lastly, the remark of the Vermont blacksmith, made last summer, is worth quoting: "When I finew all about steel, I know less now, and am deginning to think I do not know anything!"—Mechanical News.

Leipsic, according to Actury.—Dr. Andree of Leipsic, according to Actury, discussed before a recent meeting of the Anthropological Society of Vienns whether iron was known in America in pre-Columbian times. Meteoric iron was known in America cortainty in use among certain tribes and the Egyquinnax, but Dr. Andree thinks that they are the fact, among others, that the Indians (the art of forganinnax, but Dr. Andree thinks that they are under this conclusion is based on the fact, among others, that the Indians (the art of forgunder wholly unacquainted with the Assistant and employ the Colling the Mexicans and Peruvians) knew how to obtain and employ for iron mines in the history of the civilization of ancient America. The language test so ordinate the history of the particular in general. Moreveston for orivilization of ancient America, The language word "spalligue" as that for iron, but it really word "spalligue" as that for iron, but it really word "spalligue" as that for iron, but it really word to pre-Columbian grees, especially in the received means metal in general. Morevest, of the means metal in general. Moreceilly in the Johnstone of Peruvillization for your serious of Feru and Morthern from have been discovered, although the no facility tom have an easy are found in the Indiana placed their in the Peruvillization for the Columbian grave, here Indiana placed their in the Peruvillization for the Columbian grave, here Indiana placed subjects in their tomber several monade in Ohio by Mr. F. W. Putnam, of the Peabody Museum in Cambridge, both in a metural state and hammered; in the latter

USEFUL PLANTS AND ANIMALS,—Dr. Hook, a Cderman maturalist, finds their the Eastern form sighter affords 269 species of plants and 55 of animals useful to man, while the Western world contributes only 52 of plants and 13 of animals. UTILIZING STUMPS.—In Sweden the etumps and roots of trees remaining after a wood has and roots of trees remaining after a wood has tion of illuminating gas by dry distillation. Other products, such as turpentine, creesots acetic soid and ter, are also obtained. It is respected that this new industry promises to become very important.

TELEPHONIC CONDUCATVITY OF RED. HOT WIRE.—In late English experiments a red-hor wire was made to serve as a telephone transmitter. A fine platinum wire, several inches long, was placed in a circuit with a charged accumulator, and induction coil and a receiving telephone, and when the ourrent had heated the wire, words spoken to the latter were audible in the telephone.

PLUORESCENCE OF BISMUTH.—Engineering to M.—Engineering to M.—Engineering to M.—Engineering to M.—Engineering to M.—Engineering to B. Borbutten, does not horosee in a vacuum when aubmitted to the action of the electric discharge; but when mixed with sulphate of estermic mixed with sulphate of bismuth with aupliates of bismuth with discharge and with carbonate of strontium a blue light and with carbonate of strontium a blue light. With auphate of morescence. M. de Boisbardree an orange fluorescence. M. de Boisbardree and reagents of the laboratory, several of which were reported to be pure.

Mesers, Hurghanson or Hran Into Electricity.

Mesers, Hurghanson & Mernst have devised a most curious experiment from the scientific most curious experiment from the scientific point of view. A thin metalliclest is placed in point of view. A thin metalliclest is placed in tained at uneven temperatures, benefits at emain-covered that a difference of potential is manicovered that a difference of potential is manicovered that a difference of preciable. Moreover, the true, but quite appreciable. Moreover, the direction of the current varies with the lines of direction of the current varies with the lines of of perceip of the magnetic field. They used a piece for in a field of 5000 units. The difference of temmination of the magnetic day placing two pieces of temminations that the magnetic day placing two pieces of of which was secured by placing two pieces of of which was immersed in cold water and the off which was immersed in cold water and the contact where is a difference of the presence of the presence of the presence of the contact was incontact where we decided the cold water and the contact where we have a difference of contact where is a difference of the difference of the contact where we decided the contact where the contact was incontact where we decided the contact where we were contact where we were contact where we were contact where we were well as a difference of the contact where we were contact of the contact where we were contact where we were contact where we were contact when we were contact where we were

Accuracy the man area over the rail against the brilliant green.—Saviss Overs.

Accuro Cold. A person who has never been in the polar regions can probably have no idea of the polar regions can probably have no idea to the polar regions can probably have first that for the polar regions can orbiton can be formed of the term rible experiences of arctic travelers in that ion terms of the term to arctic travelers in the temperature down to save not so describe a constant of the save of

oryetal of beyl than water. The sky was perfectly clear and cloudless, and overhead it was feetly clear and cloudless, and overhead it was a deep blue color, but near the horizon this blue was so completely eclipsed by the vivid color was brought out and the blue was changed to a lutid pink as intense as that of a November versuel on the green water that of a November versuel on the green water speared as red as carmine, and I afterward found in a voyage through the sounds in a white schooner that the sides of the vessel seemed to have a thin cost of rose-colored paint when seen over the rail saginst the brilliant green.—Swiss Overs.

more like the surface of a gigantic polished crystal of beryl than water. The sky was per-

DISAPPRARANCE OF LAKES.—During the lest century 100 lakes in the Tyrol have subsided and disappeared, according to Dr. A. Bohm, of the Geographical Society of Vienna,

be suddenly ravenous.

In the Mides of the Darkness
fan for the Darkness
In the Mides of the Darkness
The phosphorescent eye-balls of the wolves began to shine. Their light, which which which beard. The odor, of treat meat stringed the treatment of the more stringed by the most stringer of the meat stringer of the most stringer of the stringer of the stringer of the most stringer of the stringer of the most stringer of the stringer of the stringer of the stringer of the most stringer of the most stringer of the s

The falling snow was bardening which the conformation of the confo

The Mines and Miners. .

RA BEDRO CVZLERY"

(Continued from our last)

or the Paras from El Minero Mexicano by

Diego is a yone unear who, having struggled with forcing, has a yone unear who, having struggled with forcing, has, by diet of labor, acceeded in oreasing for limits of the protein modest but in oreasing tor himself a position modest but in his series in the himself of broad like to go you when it has courred to me to interprete to go you when it has courred to me to interprete to the conditions." "Why, and for what?" I asked." "O hunt lions," he replied; and sometimes about his series of the conditions of the series of the conditions of the series of the conditions of the conditio

Mothbe is also difficion and the discrete difficient of the Simple and Mothbe is also difficient. I crossed the continent of Africa; but in this phrese bow continent of Africa; but in this phrese bow chiefes, dangers and fatigues are included. Alore then a hundred lilustrious men and chiefe, Alore then a hundred lilustrious men collect. Alore then a hundred lilustrious men characteristical in the content of the collection of the collection

Inmanse Pines were Bathing Their Tops In the clouds, as desiring to behold the sun aboner than the cootes. These two leadings are desiring to behold the subther shoundart, and under their shades a multitude of shrobs and of dense brambles, presenting an ing an infinite variety of species, were greent, grantones roamqes were interlaced, gigantic control on their branches like an immense bouquest of the control on their branches like an immense bouquest of the control on their branches like an immense of waltiches and roam of the cookes, so as the cookes, and the same of the pines and cookes, so as to form a movable such of foliage. The entrace to form a movable such of foliage. The entrace was covered with a kumus of green slime and the form of the strong of the such of the strong pines was covered with electricity to such a degree that of like thunderbolt. The atmosphere was observed, with the strong of or as of sulphing and of the such of the strong of same of many odoriferous grams and the perfumes of many odoriferous grams and the perfumes of many stainferous grams and the perfumes of many the rising sap and by the cutil creaking of same of some young the rising sap and by the surean of some young man. A Very Fine Rain Was Falling

Which estimate the teath Was Falling. A Very Fine Rain Was Falling. Which estimated detay thing, and the clouds between which the little caravan was making its way were increasing with their mist the shadows of the forest and its imposing aspect. All virginities are beautiful, but those of nature always pleasent themselves to the spirit as may mitchent and dazling. At noon the party is among the state of the cloud of

keys may be made to look and unlook it, it oan only be unlooked from the outside by the particular heey used in locking it, it is not brider loses his key it can be unlooked from the holder loses his key it can be unlooked from the outside, and then looked and unlooked from the outside by any of the keys.

To CUER DAMP WALLS.—Boil two ounces of grease with two quarts of tar for nearly 20 grease with two pounds, well gase one pound, slaked lime two pounds, well dried in an iron pot and slited through a flour dried in an iron pot and slited through a flour gives, and so not the lime to the tar and gives, to form a thin paste only sufficient to cover a square foot at a lime about an eighth of an inch thick.

An English lookmaker has constructed a key which he says is capable of opening 22,600 pations lever looks, all of which differ in their wards or combinations. As described the key weights three ounces, is nickel-plated, and is said to be the result of three years' labor on the part of the result of three years' labor on the ferent wards and combinations.

In Guiding berrs.—In guiding belts on or it is beet to protect the hand, with a sack or piece of cloth held in the hand, but never wrapped around it or the wrist or arm. A stick is liable to be caught by the pulley or belt, drawn between the pulley and belt into other machinery, or thrown awifuly, etriking you or some one clae.

To PREVENT THE RUSTING OF FIRED IROUS.—
A number of preparations may be applied to filed irons to prevent rusting. The Jest, partings, is boiled linesed oil, as this will not incertere with the painting. The object is to keep the sir or oxygen from coming in contact with the iron.

## A Unflous Mine,

Mr. John L. Robinson, principal owner and talked of Readjuster mine, in which the recent discovery of a large body of mineral was made. Last Sunday the soribe of this paper, says the Black Range (N. M.), visited the much

managen of the property as where years and a protection of the property as wonderfully developed by neutre, some places being the property as wonderfully developed by neutre, some places being the property as wonderfully developed by neutre, as no oped by the beand of neture. To the golds and the factors, which as been practically developed by neutre, as no oped by the beand of neture. To the golds and the factors as depth of 165 feet, you enter a large, neutre, as no treate a large, neutre, as no developed by neutre, as a developed by neutre, as help of the perfect hands and presents in a lifetime. On descending the main shelt at a developed by neutre, and it is neutre of the perfect form the perfect form and presents to pictorize and a send perfectly which particular particular and its and exact a some remote either raid as well to matter that the presents and in place, the winters of the walls on pictorize and a send a send perfectly which extends the perfect form the form the construction of a fearnty of the perfect form and property of the wall of this neutral which have and its and the managed over the sends the analysm of mineral which the read to end, and in the work and it and when the over the end to end, and in the property of the wall to over the with its absenting of mineral. The lower over the solid and the well the work of the wall form over the down of its bring more or less filled with the read form the working to obstructed by loose boulders, which the work and the work and the work and its also solid and allowed over the feature of the feature of the care three down or seen the down of the done of the down of the down of the down of the work of the

Good granife has been found near Raymond, on the Yosemite railroad, and some is being quarried for use in building the steps of the Presno courthouse,

USEFUL INFORMATION,

THIMMING KEROSKUR LAMPS,—Always fill and trim your oil lamps by daylight, and see that there is sufficient wick to reach the bottom of the reservoir. Haise the wick allightly above the stoop of the reservoir. Haise the top of the cone, and cut it evenly to the same shape as the cone, and til evenly to the same shape as the cone, out it evenly to the same shape as the cone, all the other de and discolored portions of the allies of the days and the solesors to remove any particles side with the solesors to remove any particles side with the solesors to remove any particles of the 'trimming'' that may have fallen into of the the other than the solesors to remove any particles of the 'trimming'' that may have fallen into of the bedy of the burner. Keep the top of the wick tube clean by frequently scraping off the balled oil which surrounds it.

ECONOMIZING OLD RAILWAY SLEEPEES,—80 greet has been the scaroity of railway sleepers in many parts of Europe, that various devices have been any parts of Europe, that various devices have been suggested to supply the dedocency. A plan is in vogue in the Netherlands of using a prise of scarolly tail jet that part where the rail rests, leaving a sound length of about three feet in the canter. Two such pieces are therefore tail resting on the channel iron, which thus prevents it from wearing into the sleeper. As these vents it from wearing into the sleeper. As these term more resistance to lateral motion than or-dimensional sections.

LOCKING CANAL BOATS,—The question bas oftenbeen seked, "Which takes the most water to lock, a light boat or a heavy one?" Super to lock in which the water as drawn down to be lock in which the water as drawn down to the lower level and the gates are chosed, the lower level and liled to the upper lovel. The guardness of the lock to contains between the two levels, and the work sontenes of water to the hight of lies center of gravity of water to the hight of lies center of gravity of water to the hight of lies center of gravity of water to the hight of lies center of gravity of water to the hight of lies center of gravity of water to the hight of lies center of gravity of water to the high lies and both will be exact.

In the same, whether there be dosting in the lock a big boat, a little boat, or no boat at all lock a big boat, a little boat, or no boat at all.

OLEANING SHOW WINDOWS.—A good cleaning powder for show windows, which leaves no dirk in the joints, is prepared by moistening calcined magnesis with pure benzine so that a drop form formed aufficiently moist to let a drop form showed in glass bothles with ground stoppers, in order to retain the easily volatile benzine. A little of the mixture is placed on a wad of cotton and applied to the glass plates. It may also be seed applied to the glass plates.

Herecor of Hear on Pianos,—The heat of an fine is very liable to put a piano out of tune. This is not due to the expanding and contracting of the strings, as generally supposed of the diversions produced in the sounding-boards of the air, seposially an tunesce-heated houses. Sounding-boards are made of spruce, because of the superior resonance of the the party of the strings of

A MEW LOCK AND A WEW KEY.—Mr. Dore-mus, a clerk in the Tressury Department at Washington, is said to have invented a new lock which it is thought will be used in post-offices, It is thought while any number of

MAORDEN, W. T.S. The ground worked was first in the county, and the county, and the county of the co

THE EXTENSION.—Work miss used confined by a packson.

Inyo.

C. & C. have extended their main rised west of Jackson.

C. & C. have extended their main rised some two saids and a planting. From there as and a planting. From there as and a planting from there as and so for contraining works. The code works freight miles further southward, to a point, and probably some goo tons; and about so from concentrating works. The concentrating works are the first paints and probably the clothous pass a lease of the some cool concentrating works. The concentrating works are some so from core or expired at this point, and probably the clothous pass a lease of the second grade.—A shipments also some so or from the be Slate Range mines. The one expension of the company, but there is undeast the immediate violating to result in a tesurrection of that once noted mining region.

Panamint.—Cor. Inyo Index, Nov. 9: The mines in the immediate violating ore. The ore is undoubtedly enough in it to make the venture pay, and any regult in a tesurrection of that once noted mining region.

Panamint.—Cor. Inyo Index, Nov. 9: The ore so ore stry mostly argentifectous milling ore.

The construction of the venture is derived, to recompany, but mines in the immediate violating ore. There also over the properties. A ten-stamp mill become very valuable properties. A ten-stamp mill is now being extracted and those convered, which in the next future will become very waluable properties owned brings extracted and those covered, which in the next future will become very waluable properties on no difficulty need be appreciously argentificous milling core. There also never a future will are chiraled and those surplements, of too the milling confiders and bended in their treatment. There are good many valuable properties owned by the products of the products of the farmities owned by corporations and privated by the farmities owned by corporations and privated by the farmities owned by coperations and privaced by the farmities of the farmities owned by

Miscentanined, Miscertanined, Miscertanined, Adiscentanined, Amiscertanicous, —All the bids for sinking the shaft Miscertanicous, —All the bids force of the Morth Jear too deet deeper were rejected. As the ground has become much softer since it was proposed to sink by contract, all the bids received were considered too high under the circumstances, and it was decided to continue the work by day labor. Mothing further has been done toward straightening out the tangle of the Amador Queen, It begins to look as if this fine property will have to be pushed to a forced sale to satisfy the judgment standing. H. Early is sufficient and the indications of the shaft is down nearly go feet, and the indications face shaft is down nearly go feet, and the indications on his tunnel enterprise on Martiley all the indications on his tunnel enterprise on Martiley west the Worth Zeile. W. Boxall has recommenced work on his tunnel enterprise on Martiley's hill, just west to Miscer misce misce west of Jackson. Work mine, three misces west of Jackson. The EXTENSION—Thyo Kegister, Nov. 10: The C. & C. have extended their main track some two

MCKENZIE,—At the McKenzie mining property situated near pine Grove matters are somewhat mixed. The outlook favors a long siege of vexatious determined.

Micetal Avgent Avgent Avgent and a second matter and seco

MATER SCARGE.—Or, Amador Scatinel, Nov.

19. The Bunker Hill mill at Amador City is tuning by steam, all the test of the mills there being closed down on secount of no water. At the Plyster Hill mill at Amador City is tuning by steam, all the test of the mills there being closed down on secount of no water. At the Plystel and second of no water. At the Plystel and second of some constitution of the too states of the following states of the being seed with the consolidated mines, the Amador City has entired in the test of the being a permanent mine. The Treasure-Box mine of Amador City has entired in the closed of the control of the wall and the cast drift of the school of the wall and the cast drift of the school of the wall be too the control of the wall be principle of the Chill mill, but of more than the cast drift of the school level, a vein some the principle of the Chill mill, but of more than the cast drift of the school level, a vein control of the wall to be teached on the footwall build the cast drift of the respect head of the wall and the control of the wall and the control of the wall and the control of the wall and the cast drift of the croscott weet on the benefit of the middle well wall the concent weet on the control of the wall and the control of the wall of the cannot out of the cast of the process of the wall of the cannot out of the cast of the greenstage of the carry and the control of the control of the cannot control o Amador.

## CALIFORNIA.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

TRINING BUNNARY.

his quarte-mill. The Hidden Ireasure mine has closed down for tepairs.

Bhaeka.

LOWER SPRINGS.—Cor. Shasts Courier, Nov. 11:

Lower and the control of the old workings, and structored last week that the Gen Co. had structor yet of the old workings, and the structor of the old workings, and the structor of the old workings and the structor of the old workings and the old structor of the old workings and the old structor of the old workings and purply of the old structor of the old struct

the study of species well and the westber will be the spring as soon as the westber will permit.

San Diego.

Banker,—Cor, Julian Sentinel, Nov. III. The Balley Brothers were elsted over a recent strike in the Cld South Hubbard mine. While J. O. Balley the Cld South Hubbard mine. While J. O. Balley assorted as two-floot verification of the well of the control of t

PITTSBURG CO.—Plumas National, Nov. 12: The PitTsburg Co., will commence immediately grading for a flume near their mill-site on Poplar oreceit. The ledge prospects well and the company will put up a mill in the spring as soon as the weather will permit.

PIUMBS.

CLEANUP.—Placer Kepublican, Nov. 9; The celeant of 622% ounces at the Hidden Treasure cleant of 622% ounces at the Hidden Treasure mine mentioned last week amounted to \$111,400, of whitch \$692 was expended for wages. The mine has been put into first-class condition during the past summer at a cost of over; \$20,000, all of which past been put into first-class condition during the past summer at a cost of over; \$20,000, all of which have been pat into first company. In the main tunnel 2300 feet lawe one cent having been contributed by the stock-been have been laid in the gragways, the air drift has been re-timbered, a new sluice flume 1300 feet long been re-timbered, and employed and repaired, and burny South will prosper tocorporate and repaired, and a son ew cars have been laid in the gragways, the air drift has been re-timbered, and sumny South will prosper scoorbeen burned and repaired, and sumny bouth will prosper scoorbeen burned and repaired, and sumny sears to end then then timproved and repaired, and sumny sears the sear have been laid in the gragways, the side rail of the past of the prosper and the past of t FIRCOF.

Many strangers are visiting the unites.

To Begin Prospecting.—Foothill Tidings, Nov.

It: At a meeting of the directors of the Scalpel G. M.

Lesidence. The contractors have completed their is situated on the Nevada road, just above Hammill's work on the new Loami shaft, Further operations work on the new Loami shaft, Further operations work on the new Loami shaft, Further operations will shortly be contractors have completed their will shortly be considered.

MILL STARTED.—Nevada Tyantscript, Nov. 15;
Fifteen of the twenty-five stamps in the mill of the Fifteen of the considered.

MILL STARTED.—Nevada Tyantscript, Nov. 15;
Fifteen of the twenty-five stamps in the mill of the mill of the considered.

MILL STARTED.—Nevada Tyantscript, Nov. 15;

The Considered of the twenty-five stamps in the mill of the successful the machinery worked admirably, and the machinery worked admirably.

well. The Ajax mine will commence operations soon. Fine specimens of gold have been taken from this mine lately. The ledge is two and a half feet wide. Mr. Pinkerton is interested in this mine and is anxious to put it in paying shape. Mr. Fancher here is one of the principal owners. Fancher here is one of the principal owners.

WEALOW JACKET.—Are shipping 300 tons of ore Washoe District.

VELLOW JACKET.—Are shipping 300 tons of ore district of the Santiago and Druswick miles, on the santiago and Druswick miles, on the 1400.

The Santiago there is no work below the 1400.

The Santiago there is no work below the 1400.

The Santiago there is no work below the 1400.

The Santiago the special shipping and district shipping and the 1400.

The Santiago the special shipping and the 1400.

The Santiago the special shipping shipping and the 1400.

The Santiago the special shipping shippin

MOFFIT'S GEAVER RIVER MINE.—Sonors Demors Dronors MOFFIT'S GEAVER RIVER MINE.—Sonors Demors of a condition of the windress of a successful Tuolumne River gravel-mining man, had some concluded to suspend operations for the year. It had been to suppend operations for the year. It had not this step will be seen at a glance. In the bottom of the cavities or holes where the greater tree at the world was made. The cason was getting too bottom of the cavities or holes where the greater the world was made. The season was getting too dollars can be saved by securing his dams and taking too out the fumes, so that the lumber may be used that the time out the fumes, so that the lumber may be used that reached the richer deposits. He is said that he greater depit hus not the function of the stand has the greater deposits in order to bave the reached the richer deposits. He is taking great the world was made this that the greater depit hus precaution to secure his dams, in order to bave the stand the strugg freat the world was read that stands in order to bave the stands and the strugg freat the world was read the stands and the stands are the world was read that the stands are the world was read that the stands are the factorial that the stands are the world was read that the stands are the world was read that the stands are the stands are stands and stands are stands and stands are stands are stands and stands are stands are stands and stands are stands are stands are stands and stands the stands are stan

destined to be one of the best, if not the best, quarra designed to be one of the best, if not the best, quarra camp in the county.

A GOOD STRIKE IN WEW RIVER.—We are creediably informed that G. V. Hely, one of the pionies, the Modoc, in that district; Mr. Hely's ledge mine; the Modoc, in that district; Mr. Hely's ledge on the same mineral belt mines are sluared, and prospects way up into the number of situated, and the recent strike strengthens to the richness of the Mew River mineral belt.

MINERAL KING.—Visalia Delka, Mov. 10: Henry Miller and two other men the Rawesh colony delayers of the same mineral belt.

MINERAL KING.—Visalia Delka, Mov. 10: Henry Miller and two other men from the Kawesh colony delayers of the base always entertained as to the circles of the Model of the same on the Public Chelt, it is said, has been on loaded with machinery from the Empire mill. The shat on the White Chelt, it is said, has been on the Pinnacle and Les week with a depth of yole et a drift was run so feet west, but did not ensure too feet with maschinery from the Empire mill. Owners, White & Cobinumbus. Work continues on the Pinnacle and Lesdy Emma mines, and the countert be one body. Some think the Conner too ere do the said and \$4 ro a depth of ont as great deal of which is reported to be of high ont, a great deal of which is reported to be of high the Model of the said. The seasovery ledge. Mr. Davis has silver, Mingelo has bad a tunnel started on her times and dips to the east 45 degrees, near the content by the said of the said of the said in the ledge. Mr. Davis has silver, which, it is said, has been said and \$4 ro a silver. The ledge of ore at a depth of about 25 feet, which, the foot ledge of ore at a depth of about 25 feet, which, it is said, assays \$40 in gold and \$4 ro. So of high cooled with the said of the said of the said of the said which is recovery ledge. Wr. Davis has said on the said which is recovery of the said tunnel started on her claim. Another Mr. I. S. M. Moffly, the endores of a time is said

Another Strike.—Trinity Journal, Moy, 12:

Geo, Bailey, who discovered the Thankegiving mine fine same statistics, has made another strike in the East Fork district, has made another strike in the same statistics. Boout two weeks ago he discovered the frest of the district. Boout two weeks ago he discovered the curek, near the Golden Chest mine; he traced the verial stong the surface for a distance of about too feet and then tun in a cut on it and found a well-street of the substitution of the substitution of the substitution of the down; the ore carries free gold and supply and; the ledge whore cut was as that of the Golden Chest; specimens from the safe from the substitution of the substitution of the substitution face in the new find are of the opinion that we velop into a fine property. Each week encouraging velop into a fine property, Each week encouraging velop into a fine property, Each week encouraging velop into a fine one of the confirm the coming in the county.

A Good Strike in Mew River,—We are creedently informed that G.Y. Hely, not of the pictish is the first weak county in the county.

Trinity.

except Watson, Fries and Morse, who became interested later. They passed through one rim, excluded for a back channel. This gold is should be extended for a back channel. This gold is should be extended for a back channel. This gold is should be extended for a back channel. This gold is should be called a Downellielle. All around fare are promining and brings \$18 per ounce, after being melted at Downellielle. All around fare are promining the sand Louis Gaindriel. All around fare are promining to a force by the sand Louis Gaindriel. The Code's old ledge that assayed \$23,75 per ton. The crooked trail. Iron rock is plentiful, sure indication up the mountain-side, connected therewith by a crooked trail. Iron rock is plentiful, sure indication of close proximity of sold for the proceed the rock looking splendid, with plenty of free gold in sight, and the repurse the cock of the cokey ledge, shoul a mile and to thoroughly develop it. At present Mr. Wirtsker is building a be tunnel progresses into the intend to thoroughly develop it. At present Mr. Wirtsker is building a post of the cokey ledge, shoul a mile for the channel and it satisfactory prospecting and its alteriation of the cokey ledge, shoul a mile for the mill for the bring and the formal will be replaced by a ten-stamp mill. The Sierts Buttes Mountain Co. are replacing the temporary structure, all the company can afford, the rock being low grade. It will stand on the site temporary structure, all the company can afford, the rock being low grade. It will stand on the site temporary structure, all the company can afford, the rock being low grade. It will stand on the site of the old Hanks mill.

however, now near, and it is hoped a connection will be made in a few days, The pumps are working hold and it is hoped a connection will be made in a few days, The pumps are working help and the said the said the south well.

Crowwy Point,—Since the last report the south distinct the south and the said continues to widen, but a difficult on the goo level has been extended to the south a south and the said continues to widen, but a difficult on the south and the said that th

Impleted Solve.—Formation continues tough.

Tuscarora Cou.—Are making good progress ainking ghaft. Have sunk at feet during the week! total depth, as feet. Whim has been placed in position and will start in a few days, when will make better sand will start in a few days, when will make better beadway. Some material passed through in the sheet way. Some material passed through in the sheet way is a few days, with drift has been extended 5 feet. In sinking, the footwall portion of the ledge carrying ore dipped beneath the incline of the ledge carrying ore dipped beneath the incline of the ledge carrying ore dipped beneath the incline of the ledge carrying ore dipped beneath the incline of the ledge carrying ore dipped beneath the incline of the ledge carrying ore dipped beneath the incline of the ledge carrying ore dipped beneath the incline as not one crosscut east. Crosscut will be started as soon as north drift has been extended far enough from

FOUND TREASURE.—Shaft has been sunk and imbered so feet during the week; total depth, 145 set. Formation continues tough.

THECARDRA CON.—Are making good propress Taecarora District.

Belle Isle—Times-Keview, Nov. 11: East record, a Sociotio lovel, has been extended 5 feet, often length 91 feet. The rock continues very bard. Powar Terester Experience of Seet.

BUILDING REDUCTION WORKS,—Silvey Sight, Nov. 12; Supt. Farish of the Bunker Hill and Dwarft mines at Galens has commenced the erection for reduction works on the property. The mill will will expect tecently purchased of the original owners by the present company.

Therefore the present of the original owners by the present company.

## Galena District.

IDA.—Virginia Enterbras, Mov., II; W. W. Byrom of Daylon was in town yesterday, II; W. W. Byrom of Daylon was in town yesterday, He is inserted in mines in Cathfield district. He says that is men are working in the Ida mine, situated three-same networking in the Ida mine, situated three-same ledge. The Ida is worked through a tunnel sand a wince in the tunnel. The lot is reduced at principally by John Briggs, G. C. Fish and Mr. Principally by John Briggs, G. C. Fish and Mr. Hindley mine, but a standard on foot to sink a wince to surike the ledge, which is known to exist a wince of side of the interpretation of the standard distance. The deepest workings are at a certain distance of 150 feet from the surface now down a distance of 150 feet from the surface.

## Garffeld District.

ALTA.—Are extracting ore from the 785 and 1150 (levels, T) The mill is tunning well. To-night, or to morrow night at the latest, they will commence to run the mill nights as well as days.

And the mill nights as well as days, as senced to feet. The face is in porybyry with a senced to feet. The face is in porybyry with a feet, all in porphyty.

Gardeld District.

The shaft is timbered down 89 feet.

Occidential that all the control of the control of the open slope below the upper tunnel, the east croscent in the colour the upper tunnel, the east croscent in the colour the the colour the colour than the colour tha

APPIAR APPARATOR TO A STANDARD A

the funnel.

HAWWOOD—Day before yesterday high-grade ore was struck in the winze, which is now down 165 feet below the tunnel sort, which is now down 165 feet below the tunnel and in the stopes. Bighteen men are employed, who extract about so tons of ore daily, which is shipped to the Thompson mill for reduction for its banging-wall. Are now engaged in time-top it the hanging-wall, Are now engaged in time-poring the raise. This will occupy a few days, for the banging-wall, Are now engaged in time-poring the raise. This will occupy a few days, for the banging-wall, and has reached, of which mention has been made in former reports.

DAVAGE.—Are shipping 60 tons of ore per day to the Mexican mill, which is its capacity at present on account of the low stage of water in the Carson river. The assays from the sattery samples show between The assays from the sattery samples show between \$52 and \$50 per ton. The returns yesterday were \$52 and \$50 per ton. The returns yesterday were \$52 per ton. The mile is to-day in a better consist in the surface of the runnel from the action than it is a seconge in case of accidation than it will save fitting water 50 feet land sho enables them to use it for an eccape in case of accident to the machinery. When they get up their pumping machinery they will pump the water into the tunnel.

line, and is now being run by the Belcher Co. The ground run through shows no materials denage for the ground run through shows no material change for the ground run through shows no material change in the week. The quested north drift has been concientation of sir. They are now engaged in timbering the drift.

BEST AND BELCHER,—42c [evel.—East crosscut has the right of the street of quarts of low value. The face is the street base been advanced 35 feet. This crosscut has been advanced 35 feet. This crosscut ho. 2 has been advanced 35 feet. This crosscut has been advanced 35 feet. This crosscut has been advanced 35 feet. The north drift has been deen do us and repaired a total distance the feet of this drift. The lace is no quarts and oldy the feet of this drift. The lace is not altered from the feet of this crosscut has been started from the feet of this crosscut is in clay and usats aboving value, and the street is in clay and quarts showing value.

Any long and supplying 60 tone of ore per day to the bar day to street the street of t

SILVER STAR MILL.—Ketchum Keystonz, Now.

12: On Tuesday last the work of constructing the work of constructing the work of constructing the same below the total to the P. & I. Co. at the Silver Star mine, Sincky district, was completed, and the superince die building, with all the tendent in charge turned the building, with all the massive machinery in place, over to the company.

On Wednesday the machinery was started up and place mills of the kind in thil operation.

THE MORTH STAR STRIKE.—A surke of more than the contact of more than the was started up and believe mills of the kind in thil operation.

THE MORTH STAR STRIKE.—A surke of more than the same than the contact of more than the same special was a second to the surker was and as development proceeds the new discovery bids at the present time there is a vein of fine galena or at the present time there is a vein of fine galena or exposed nearly two feet in width, carrying about 100 connees in aliver and a sige proportion of least. Sev. works. The ore body discovered liese in entirely prove extensive in characteries.

ALTON DISTRICT.—Wood River Times. More than the sampling prove extensive in characteries.

Mr. Parker has agent two ammers in the Alton fact, Sev. is conneed in aliver and a geont two summers in the sincilly prove extensive in characteries.

Alton DISTRICT.—Wood River Times, and the trick, in the southern part of Indaho county, and he is confident that it will eventually be the great bone mans camp of Idaho Territory. C. J. Johnston of the best properties in Alton district, and in some of the best properties in Alton district, and in the source who have wisited it are equally sanguine in a transfer of the service was the preserved the substruct. And the preserved in Alton district, and in the source of the best properties in the capably sanguine in the substruct.

BUNKER HILL AND MAMMOTH.—An important Bunker Hill and the usual amount of ore 18 going forward to the bunker Hill and the Mammoth. In driving a drift from the main shaft of the Bunker Hill, on the 400 level, much bard ground was entonic a winze from the bird level was broken into, toon feet in an easterly direction, a winze from the bird level was broken into, and the drift extended 88 lete beyond in Mammoth and the free free from the bird level was broken into, and the free free free or the drift was found to be invery a foot thick, came in. Alter breaking through this pince are that it is a bonnanza. Good ore has also high grade ore. It is impossible at this time, of high pince are that it is a bonnanza. Good ore has also been found on the second level in the Mammoth, been found on the second level in the Mammoth, tho work of the drift in the Mammoth, on level between the main sade yesterday on the desired. High-grade ore, more than a loot in width, too level between the main sade are sladt, and now too level between the maine is as good as might be desired. High-grade ore, more than a loot in width, is still encountered in the winze from the first level. The property is now in good shape for thorough development.

OLD GUARD,—The may be be in thorough development.

BIG HUG DISTRICT.—Prescott Courses, Now, 10: William Van Name, the Big Bug district miner and mill man, spent a short time in Prescott yesterday, William Van Name, the Big Bug district miner and mill man, spent a short time in Prescott yesterday, he as a small mill, rock-breaker, pans, etc., bas High service move work and will now do some more. He work to will be made on ore from Robinson miner, Mewey published in the Coursey, that the Tuscumbia mill now has been morther and the Lane and Tuscumbia miles have been sent down. Lester lacksed in the miles are only and a spent of the miles are being made. Lumber and other supplies have been sent down. Lester lacksen came miners at the Tuscumbia mill. Fred Sattles, foreman to 10: a start breath and service working in the Adely being miners here are issuing a great many tons of one, a tree Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill. Fred Sattles, foreman to 10 one, as the Tuscumbia mill and the tusual stoney of the same sectivity of the time fore the foreign stoney south of the same sectivity of the time foreign to the same sectivity of the time foreign of the ingester the same sectivity of the time foreign of the ingester the same sectivity of the same sectivity of

portion of it is lower grade. Work has been susbrock in this nowth durful cholled to enable us to push
the durful cholled to the

THE GREAT MINERAL BELT. — Georgetown Courter, Wow, to: A surip of storbeat country 22 miles in width, having for its eastern boundary a miles from Balarat in Boulder county, south so defend the control of the best of the great mineral belt of bounder, Glipin and Clear creek counties. Each the character of this belt shows a decided charge in the character of the mineral, Eight miles of the mineral, Eight miles of the mineral pelt in content on end of the belt will cover the great tellurium mines of Boulder country. The mext eight miles of the lead and silver country in the Caribon will cover the lead and silver country in the Caribon of auriterous pyrites, then Idaho Springs, and Ecorgetown with eight miles drotter miles. Another eight miles covers the store miles antiferous pyrites, then Idaho Springs, and miles further miles drotter miles antiferous pyrites, then Idaho Springs, and miles further miles covered to the storber of the complicated formation is that the veins have the storber country in the connection is that the veins have the same general trend as the belt.

I BON,—Elk Mountain Peiter, Mov. 12: The expect the last have the complicated formation is that the veins have the service of General trend as the belt.

I BON,—Elk Mountain Peiter, Nov. 12: The expect that have the complete the miles for the pelt.

BICH GOLD LEDGE FOUND,—Prescott Courier,
Nov. 11: The Courter is pleased to tell its readers
Nov. 12: The Courter is pleased to tell its readers
that a miner named taking has a big thigh it Hassayampa district, 12 miles south of Prescott. It is
sayampa district, 12 miles south of Prescott. It is
gold ledge, about 18 inches tables and very rich.
Two and one-hall sackes of the ore (less than 300
pounds) yielded \$11.50 plus gold. He crushed the
crosses Hassayampa creek about where placet mincrosses Hassayampa creek about where placet minsecret unil a couple of days ago. Mr. Bryson has
seld the Bill Arp mine, near Black Canyon creek, to
bit. George 5, Barber, for a large sum of money,
of the Bill Arp mine, near Black Canyon creek, to
a placet mine has "paid from the grass roots."

Ikow-HILL.—Black Hills Pioness, Nov, 7; The fron Hill smellery shut down Friday money, Nov, 7; The fron Hill smellery shut down Friday money money from the front set of the form set of the furnishment of the front set of the furnishment of the first of the furnishment of the furnishme

MEXILOPMENT WORK.—Silver City Enterprise, look, 12: Two different parties claim to have found coal in paying quantities in Sierra county. Arrangements are being made to again work the Stephenson miter in the Organ mountains. Charles Longuemare with a deep county. Arrangements are being made to again work the Stephenson with the Organ mountains. Charles Longuemare silver abipments to the Rio Grande smelting company at Socorto. The Pyramid mill has been at all the statements of the Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this city, for wages due, leaded by O. E. Colby of this colly to make the form the present and the work in progress. A specimen property and the work in progress. A specimen for every and the work in progress. A specimen free suffer of the samp property and the work in progress of the Solution of the or street was fully as great as the price paid. The new camp between Camp Veilines and feeving a street paid. The new camp between Camp Veilines and the ore treet in the contract of the coming to the front very rapidly. Some of the ore street by the contract of the DARK ORE SHIPMENTS.—Psitk Record, Nov. 123.

During the week the Crescent shipped sto,600 pounds, decreased of first, class ore; total, 274,500 pounds, Vesterday the class ore; total, 274,500 pounds, Vesterday the class ore; total, 274,500 pounds, vesterday the bars of shipped stoped or total pounds or shipped stoped so bars, 6718 pounds of bars of pounds of bars, 6718 pounds of pounds of bars, 6718 pounds of pounds of bars, 6718 pounds of pounds o

## NEM WEXICO.

most extensive scale ever before attempted in Otemost extensive scale ever before attempted in Otegon.

CANAL PURCHASED.—The Maryaville Mining
and Canal Co., for many years owners of the kuburn canal and waster ditch, build in the year 1865,
and since that time the main water supply for the
placetr mines of that hetetofore rich camp, bave sold
mines. We under-tand the consideration was 1851,
mines. We under-tand the consideration was 1851,
mines and has turned over the property to the Maryasince and has turned over the property to the mass 1851,
mines. We under-tand the consideration as 285,
mines and has turned over the property to the mass 1851,
mines of the syndrem of the Salmon creek mines.

It. Annon Miller, at the head-waters of Mihouse
since and has turned over the property to the new
Arthouse CREEK.—Rogue River, Courter,
M. M. Kilner lettle me that feet a seady for
the water season, with good prospecting on their bot cleams and property part of Grass Fiel. The
proct abead. James Trumbul continues to run his
makes fair wayers. Henry Hennes, at the
mouth of Rum Chich, has his new house finished,
ground although very rocky pays well. Henry
Drew is still working on their past of Grass Fiel. The
ground although very rocky pays well. Henry
Drew is still working on their past of Grass Fiel.
This quartz claim as the best thing it has everything
ground although they note to Grass Fiel.
This quartz claim as the best thing it her under in
the water season previous to starting their unnels
of the mountain, it has a well-defined footwall and
Grass Fiel.
The placer miners on the hill and
Clay henry. The placer miners on the hill and
clay hearl. The placer miners on the bill and
clay hearl. The placer of starting to by well.
This quartz claim as the best thing the verse on the
of the mountain, it has a well-defined footwall and
the water season previous to starting to by the grees
clay born! The placer miners on the hill and
clay hearly are all ready and anxious for water to
enable the mountain, it is a green PEDEDER, does not increase, and is kept wen in tance ing, does not increase, and is kept wen in the pumps.

MORE MEN.—Butte Inter-Mountain, Nov. III:
The shut-down of the Chambers syndicate mines was for a much less time than at first supposed, and they are practically tunning again as usual. About a hundred men were put to work Tuesday and the whole force will be on in two or three days, whole force will be on in two or three days.

BELLE, —The heavy flow of water, while continu-g, does not increase, and is kept well in hand by se pumps.

operations will be successfully resumed within a very short time.

GRANTYE.—Phillipsburg Mari, Now. 10: The output for lear week was 61,378 ounces fine silver, and 23,59 ounces fine silver, bird specially of rock.

HOPE.—The same conditions of busy stamps and marian output and keeps the stamps constantly dropping upon the usual output and keeps the stamps conditions of busy stamps and filled ore bins continue, and the reserves as developed by the prospect work carried on keep easily shead filled ore bins continue, and the reserves as developed of all demands upon the mine.

HOPE.—The same conditions of a strong and well-by the prospect work carried on keep easily shead sinking the sharp mariant of the total.

The tunnel, now in a distance of 1050 feet, shows shown in the world in a pay streak of excellent quality, fibe same gratifying conditions of a strong and well-fibe tunnel, now in a distance of topological deceted three counting.

West GRANTE.—The favorable conditions of the same gratify developed during the last three weeks this property developed during the last three weeks should as inches in width.

West Grante, with the cast drift of the coordinate, a beiggram received yeared three the farth which is now in the Elizabeth ground in the basing the and presenting at this writing the mariant of the drift, which is now in too feet, the seating fround, with the continuers of the basing into the brack stream of water coming into the head on the blizabeth, now in too feet, and with the writing in the drift which water coming into the head on the blizabeth, now in too face, the vein and in caving ground, with the continue of the mariant in the say dream of water coming into the bead on the blizabeth ground in which the continue of the basing the drift of the counting into the bead on a sering ground, with the continuers and stream of water coming into the bead on a sering ground, with the continuers and stream of water co

Ageenth Mines.—Dillon Tribune, Nov. 12: Supi. Hugh McDonnell, since his return from St. Louis, has been busy and active in looking atter the mining interests he is superintending successfully at Argenta. A few days ago a large new boiler arrived for the Rena mine, and it will soon be in postine. A few days ago a large new boiler arrived for the Rena mine, and will be put in place as rapidly as possible. Superintendent McDonnell is energeite bera mine, and will be put in place as rapidly as agement, and with the new and needed machinery to handle the volume of water met with, mining operations will be successfully resumed within a pepting of the suping successfully resumed within a perint day.

for wood and material are being given out by the people who propose receiting a smeller is libilaboro.

This would ocratainly indicate that a smeller is to be creeded. W. P. Cowley is own tabling out shipping creeded. W. P. Cowley is own tabling out shipping the bas about 80 feet of work done and the claim out the bas about 80 feet of work done and the claim feet and the claim out with a profit, but could be reduced here and a feet a feet

THE SALMON CREEK MINES.—Bedrock Domocvat, Nov. 22: Mr. L. W. Blasdel, superintendent
of the Salmon creek mines, was in the city yesterday, Muton has been asid herotokree of them by a Calicers and of the recent purchase of them by a Calimoney. The purchase price has been paid over to
morey, The purchase price has been paid over to
mr. Velson, the former owner, and the new company have taken abroulte countrol of the property.

The superintendent is now making arrangements to
more taken abroulte countrol tester
the superintendent is now making arrangements to
woirs, directes, etc., to be in complete readiness for
the opening of next spring's mining season, and
hope to be able to earry on operations on the
most extensive scale ever before attempted in Otegon.

COLORADO.

ODD GUARD.—The new hoisting engine is in place, and the whistle blew yesterday for the first place, and the whistle blew yesterday ior the fit shaft is completed, and drifting will commence next week on three levels. The mill will be completed next month. By everything about this property is in perpendition.

By the Holy of the county of the county is in the county of the county is in the county of the co

# GREGORY &

San Francisco, Cal.

Cor. Fremont and Mission Sts.,

# MACHIN

PAYNE'S VERTICAL AND HORI-VAD BOILERS' VALVE ENGINE MORKS ENGINES ENGINES. HOISTING

EMPIRE LAUNDRY MACHINERY, OLLO SIFENT GAS ENGINES.

UDSON ENGINE CONERNORS. PICKERING ENGINE GOVERNORS

NATHAN AND DEEYFUS OILERS, TAUITE CO.'S EMERY,
AND MACHINERY,

ING' BYINT' ELC' TVNE VND BODIEK SVM MILLS. ING CO'S EUBBER GOODS' DISSTON'S CIRCULAR SAWS. KOETING INTECTORS AND ELEC-

MYCHINEKA. WY BYA & CO'S WOODWORKING

BLAKE'S IMPROVED STEAM PUMPS.

HOLLOWAY FIRE EXTINGUISH-MASSEY'S STEAM HAMMERS. BOHLEUKER'S BOLT CUTTERS.

We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the rapidity (300 strokes each per minute) with which they run. There are 4 shoes in each stamp, so that there are 4300 strokes of the same shoes on the dies per minute. Less power is required than in The Morter mill to do the same amount of work.

The Morter has screens at both ends, giving ample discharge. There are no cams or tappaper of the stamps adjust themselves as the shoes wear.

DOUBLE "ECONOMIC" STAMP MILL

Goes with each Mill. We also have a suitable AUTOMATIC ORE

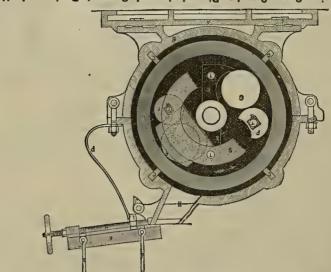
Breaker. ROCK

Several Mills are now in the mines doing excellent work. The "Economic" is not only a mill for small mines, but we believe it is destined to suversede the old stany in mills of the latest caloury.

TATUM & BOWEN

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc. 34 and 36 FREMONT STREET, SAN FRANCISCO, CAL

CENTRIFUGAL ROLLER EEIREETOCOD WI



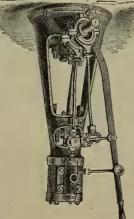
most rapidly and economically, Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Cement Rock, and other

All substances when ground leave the mill in a finished state—no regrinding be Feed. Wearing parts of Steel and Forged fron.

BLAST AND SCREEN MILLS.

with circumstences. Loss and prices are pe seen in operation and or written and prices and prices are personally prices. MILL COMP'Y

SOLE AGENTS FOR



BICKEORD'S POWER DRILLS. BEMEUT & SON'S MACHINISTS CHINISLS, LOOFS' NEM HYAEN WYNNE,G GO',Z WY-FRANK & CO.S WOODWORFING

SHIMER MATCHER HEADS. STURTEVANT BLOWERS AND EXHAUSTS. MEBBER CENTRIFUGAL PUMPS.

BRADLEY CUSHIONED HAMMERS TURBINE WATER WHEELS. BRYINVED WITTING WYCHINES

YACHT ENGINES.

# ENCINES Sud BOILERS

EROM S TO 100 H. P., ALWAYS IN STOCK

### SUPPLIES OIF2 AND LUBRICATING

## Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

and Salivation.

The most perfect appliance for people engaged in Samolfing. Dry Cushing, Ganan Workey, Canickeilyer Wines, Lead Corroting, Threshing and Stock-driving, and all other occupations in Worke there is duck, polenous vspot, or bad odo.

In Yeeding Threshing Machines, and similar and Yeeding Threshing Machines, and similar can be inches are undersole, as no foreign anabasances can be inches when they are worm.

The Respirators are soft anybed to approval after trial, and the inches when they are worn.

The Respirators are soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approval after trial, and it is a soft anybed to approve the soft anybed to a soft anybed to a soft anybed to approve the soft anybed to a soft anybe

A Send for Descriptive Circulars containing Testi-onfals of well-known parties who are at present using

THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

GIVAL BOWDER OF DYNAMITE,

Of Different Strengths as Required.

GELATINE-DENABITE, Stronger than Dynamite and even Saler in Handling.

OGREL'S EXPLOSIVE GELATINE," which contains 94 per cent of Altro-Glycerine, and

10DSON FOWDER IMPROVED.

FOR RAILROADS AND LAND CLEARING. Is from three to four times stronger than ordinary Blasting Powder, and is used by all the Railroads and Gravel Claims, as it breaks more ground, pulverizes better and saves times and money. It is as dry as the ordinary Blasting Powder and runs as freely.

CAPS and FUSE for Sale. BANDMANN, NIELSEN & CO.

GENERAL AGENTS, SAN FRANCISCO CAL.

## MINCHEZIEB HONZE

44 Third Street, San Francisco, Cal.

HOT AND COLD BATHS FRE Laundry Free for the use of Families

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE,

SAN FRANCISCO. DOMNIE B. I. P. CO.

Market St. Cable Railway, Standard Oil Company,

aus no asu ul PREVEUTIVE AND REMOVER

BOILER SCALE

DOWNIE EUCALYPTUS

Cal. Sugar Refinery, Etc.

SO4 MARKET ST.,

T BOOFER'

U. S. Navy, Pacific Coast S. S. Co.

SEND FOR CATALOGUES,

And 461 Howard St., San Francisco, where a Mill can be seen in operation and ores

# Metallurgy and Ores.

## SMELTING and LEAD CO. **SETBA**

GOLD AND SILVER REFINERY 416 Montgomery St., San Francisco.

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets. And Assay Office,

ENGINES, BLUESTONE,

**LEAD PIPE,** 

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

## JOHN TAYLOR & CO.,

ASSAYERS' MATERIALS, MINE

GIZLS, GIVERMYEE VAD CAEMICYTE' DEAG AND MILL SUPPLIES,

II4-II8 Pime Street, "San Francisco, We would call the attention of Assayors, Chemists, Milling Companies, Froquetors, text, blos, Scornfers, etc., including, also, a full stock of Edsances, Furnaces, Mumiles, Cruci-bles, Scornfers, etc., including, also, a full stock of Cruci-Chemicals.

Troy as different degrees or unoness, and variants of from the factors of the well-from paper of the factors of the well-from manufacturer are thoroughly in weight of the well-from manufacturer are thoroughly at his lowest prices. The factors of the factors of

Nevada Metallurgical Works.

ио. 28 зтеуеивой аткеет,

7. А. Госкнаврт, Маракет.
Отев Worked by any Process,

Orea Sampled

Working Tests (practical) Made. Plans and Specifications furnished for the nost suitable Process for Working Ores. Assaying in all its Branches. Analyses of Ores, Minerals, Waters, etc.

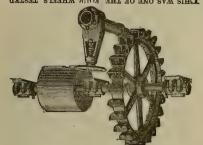
Special attention paid to Examinations
Mines; Plans and Reports furnished,
O. A. LUCKHARDT & OO.,
(Formerly Hubp & Luckhardt, )
Mining Engineers and Metallurgists.

METALLURGICAL WORKS.

318 Fine St. (Basement., dorff Street, - SAN FRANCISCO

G. KUSTEL & CO., Mining Engineers and Metallurgiets. Associate and Analysis of Ores, Minerals and Waters, Practical Instruction groon Treating Ores by in Ores processes.

PELTON'S WATER WHEEL.



THIS WAS ONE OF THE FOUR WHEELS TESTED A by the lade, Company & tesses Yelley, Cal., and Container all competitives. Send for Cityulars and guaranteed estimates.

Abents—Parikk & LACY, SI and 28 Framont Street Bar Francisco, Cal.

INVENTORS, TAKE NOTICE!

558 Market St., M. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin L. PETERSON, MODEL MAKER,

> QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE TO

JIGS and TROMMELS CORNISH ROLLS,

FRASER & CHALMERS

ENCINES AND BOILERS.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

HOISTING PUMPING

NEW YORK OFFICE:
ROOM 48, No. 2 Well Street. GENERAL OFFICE AND WORKS: Fulton and Union Streets, Chicago, III.

, SAMUA

MACHINERY,

.allim bas

This Mill as a Crusher and Pul-verizer is without rival, basl ai nostroquali

STURTEVANT MILL

CORNISH

**ENCINE2** 

MEXICO OFFICE: No. 11 Calle de Juarez, Ohlbushus, Mexico.

Springfield, Ohio, These Wheels are designed for all purposes where limited quantities of water and high beads are utilized, and are granabled of the power is transmitted directs to half the gold. Being placed on noting name agreeming the properties of parting. Estimates turnibled on application for wheels specially built and adapted in Estimates turnibled on application for wheels specially built and adapted in Estimates turnible on the obtained of this form of construction, as well as the ordinary vertical Turbines for Wooden Penstocks and in Iron Globe Cases, tree of cest, by applying to the manufacturers. Mining Turdine Water Wheel.

# COLD MINERS PARKE & LACY, General Agents, San Francisco, Cal.

JAMES

FRASER & CHALMERS, General Agents,
Chicago, Ill., and Denver, Col.

1AMES LEFFEL & CO.,

DENVER, ОРРІОЕ: No. 248 Еіghtеевth Street, Denver, Colorado.

or 110 Liberty St., Mew York.

LEFFEL'S

TRAMWAYS.

MIKE ROPE

HALLIDIE'S

Quartz, Gravel and Placer Mines!

**AMALGAMATING** Silver-Plated

HYAR LEOARD THE WORT ECONOMICAL AND SUCCESSFUL

Old Mining Plates Bought, Replated, or Gold Separated. Fifteen Medals Awarded Over 3000 Orders Filled.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

663 and 656 MISSION ST., SAN TRANCISCO, CAL.
E. G. DENNISTON, Proprietor,
Caracter of Control of Co

NOTICE.—My Silver-Piated Plates are well known and naed everywhere. They have proved superior to all others in durability

# THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

ROPPION KOOMS SUG OKE EPOOKS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

Ores Received on Consignment, Sampled, Assayed, and Disposed

\$1 25 Free

American Exchange Hotel,

OHAS. & WM. MONTGOMERY, Prop'rs.

of in the Open Market to the Highest Bidder,

## MINING SHAREHOLDERS' DIRECTORY,

ASSESSMENTS. ргдер вукву Тниверлу рвом Арувелівамките ім Міміме дей Scirntific Press дир отнек S. F. Journale,

-						
SI VOY		30 Pine St		wed W Lsinz	olifaD	oD M noD brabnate
eI 4408	ФФ	O Sansome St	Σδπε	niaF E Berie	A Co Califor	San Francisco Copper 1
al Tint	55	ontgomery St	M 82E	desM L ano:	xitA	Silver King M Co
		onigomery St		izrioM L Birri		Russel Reduction & M.
		ontgomery St	M 828, 328 M	ada. W Lette	V9V	Paradise Valley M Co.
	42	306 Pine St	uos	adaE H Will	ν9И	Eureka Con M Co
I vsM		outgomery St	M 223	extoW Tgia.		Derbee Blue Gravel M
7 45O	03	contgomery St	M 608 Brian	A. Bada. A W Har	YaW	May & signofileO go
PAYABLE	TMUOMA.	PFICE IN S. F.	ARY, C	ON SECRET	TADOLI .	MAME OF COMPANY
	'CDT	THEER MON	ATTESTS AN -CO	TATIFICATION TO	PWITERS	
						a was waterman waren
					TON ON W	South Comst.ck Con S
		215 Market St		rniaL R Levy		Butte Greek Hyd M Co
TAG	MEETING	PFICE IN S. F.	ARY. C	таяозв "ио.	TADOJ .	MAME OF COMPANY
		HEPP.	MGS TO BE	T.T.:H ST W		
or CrownoSawo	TO OOK 11111 111111 6				00.,.0041101110	Virginia Oreck Hyd M.
ontgomery St	M and	sug M L08 voll	I woll TS dgs			M buH Jeer () strippin
Oalifornia St California St		THE MI. E GEL.	61 Dec 15			True Con M Co
310 Pine 8		D.c 15 G R Spir		00122	BURYSHI	Scorpion S M Co
untgomery St	TAT OROLING TATE	Dec 26JL Hu	I 5Qel 35	O. O	Sinfornia	Mew Coso M Co
Contgomery St		ISITOM L SS VOM	I vol 72 3ge		sintolilaDc	Maydower Gravel M C
iontgomery S	M Reg BUOISS	. Nov 21, G W Se	02 40Od1 4ge	12" 24" PO" PI	California	Mono M Co
332 Kesiny Re		птен О., 4 даб	Dec 16., De	MT TO 02 9	SIMTOTHEO	MOUNTAIN M CO
ontgomery St	M 223	. NOV 19, T Wetze	el 450., di 4qs	80I8	M Co. California	Heath M Co.
contgomery St	M 826	Dec 30 W LOL	Dec 10	N 2 (5 N	odabIIdab	Heath M Co
ontgomery St		Dec 27 A K Du	ct 28. Dec 2.,	O03734	sbaveM	Gould & Curry M Co
13 Sansome St		iunoO H., al osu.,	ct 21 Nov 25.,		signorilaD	Guadelups M Co
Phelan Block		Jan 4WJ Gle		C UO. OI III		Golden Fleece G M Co
Galifornia St		Dec 30J Stadfe		N 90 "I "		Found Treasure M Co.
te drauste e o		Dec 27 G F Smi		M. OI		6O M & M OgasidO
contromery St		Dec 20, T Wetze	ct 26, Mov 29,	0 01 22	sinrolliao	Champion M Co
ontgomery St		L. Dec 20, H De La			BRYOLLE	Atlantic Con M Co
330 Pine 84	- qu	N. M. G. 8 part	IS vo M 81 45	0 01 9 4	hereM	

## Books on Working Ores.

BY GUIDO KUSTEL, M. E.

Koastive of Gold and Silver Ores (Second Edition) and the Extraction of their Respective Metals without Quicksilver. By Gund Koster, M. E., 1880.

Quicksilver. By Guno Kuerrer, M.E. 1880.

"Plus rate book on the breakment of gold and silver one without quicksilver is liberally illustrated and carmined unliet short on the breakment of gold and silver one without quicksilver is liberally illustrated and carmined various processes and appearatus employed in this country various processes and appearatus employed in this country page and in Europe, and the why and wherefore. It occupates the start of the page and a vorking apparatus. It is a work of great nearly page and vorking apparatus. It is a work of great nearly complete hand-book on the subject extent; 164 pages from your wood cuts. Fully indexed, Plainly written now control of the pages of

## ASSESSMENT NOTICE,

Mevada City Electric Light and Motor Company. Location of principal place of business, San Francisco, California. Location of principal place of business, San Francisco, California. Location of works, Merchanter, California. Location of the San Francisco, California. Location the set of the Company, California. Location the set of the Company, Merchanter, California. List, an assessment (Mo. 1) of One Dollars and Wife Cantaloria, of the Company, Mo. 10 of the Dollars and Wife Cantaloria, payable immediately in United Strices (Son More In Company, Mo. 1) of the Dollars and Wife San More Cantaloria, California, Any active thom the strice discontinuity is and advertisable of the Company, Mo. 2 of the Company, Mo. 2 of the Company, Mo. 2 of the Company, Mo. 3 of the Strice House, Will be sold on These and any the 10th ago of the Company, Mo. 3 of the Strice House, More California, More California,

## SPECIAL MEETING.

## ing Company. South Comstock Consolidated Silver Min-

A special meeting of the Stockholders of the South Competer will be bold at the office of the Competer will be beld at the office of the Competer, No. 396 california, on Monday, Batteel, room 4, San Franc sco, California, on Monday, P. M., for the purpose of taking into consideration the F. M. for the purpose of taking into consideration for F. M., for the purpose of taking into consideration for Transfer books will be closed on Friday, Mov. 13, 1887, at Transfer books will be closed on Friday, Mov. 13, 1887, at S. M. By order of the President.

J. M. BUFFINGTON, Secretary.



## TO MINING MEN.

An interest or control in a first-class MINING PROP-ERTY, now working, will be sold at bedrock price. The particulars can be obtained of IERAEL W. KNOX, st the Golden State & Miners' Iron Works, st the Golden State & Miners' Iron Works,

## RUNNELS & STATELER,

Sen Francisco. 957 Market St., Mechanical Photographers,

A SPECIALTY. Machinery, Models and Buildings

> Don't Fail to Write. Our Permens and the Agentes.
>
> Our Permens can do much in aid of our paper and the canae of practical knowledge and science, p. sessisting Agentes in their labors of canvasaing, by leading their includes and accountering factors. We intend to send none flowers of canvasaing, by leading their includes and accountering factors.
>
> Agents in their labors of canvasaing, by leading their includes and their can be and their can be an accountered to the can account of the can account of the can account of their can account of their can account of their canada ac

TRUE ARE STATES.

TRUE ARE STA

... Y8., mT elbo

Alpha... Alfa.... Andes.. Argenta Argenta

COMPANY, NAME OF

05 8 09,8 68,1 08, 68,2

S. F. Stock Exchange.

Table of Lowest and Highest Sales in

100 420 Savage 100 420 Savage 10 420 Savage 10 420 Savage 10 50 450 Savage 10 50 50 Savage 10 Savage 10

Sales at San Francisco Stock Exchange.

00.1 88. 80.1 .... 01. .... 501 501

22.5 4.66.4.30 5.00 4.55 54 5.26 7.25 4.66.4.30 5.00 4.55 24 5.26

08, 86, 06, 06, 88, 

84 . . ž.

00'9 91'1 04'1 1'00'4 92'00

06°Z 22 06° 95.71 17.1 2.75 2.70

\$9 \$4 09:9 88

## Inventors, List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Pioneer Pateni Solicitors for Pacific States.

From the official report of U. S. Patends in Drwar & 3c., B Patent Office Library, 220 Market St., S. F.

FOR WEEK ENDING NOVEMBER 8, 1887.

372,652.— SECTIONALI HORSESHOE—E. W. Bing-bam, Portland. Ogn.
372,956.— EXCOVATOR—A. B. Bowers, S. F.
Brown's Valley, Cal.
372,853.— CAR-COUPLING — Samuel Byrne,
372,854.— EALING PRESS—W. F. Denlis, Cotton-ood, Cal.

372,89.—SAPETY-LOCK FOR GAS BURNERS— 373,082.—AUTOMATIC STEM-PESSARY—Alice O. McCord, Colfax, W. T. 373,085.—Concentratore—F. E. Monteverde, 373,082.—Concentratore—F. E. Monteverde, 2, Y. 20. F. 20. E. Monteverde,

S. F. Schellenbaum, C. Schellenbaum, Ogn. Pottskad, Ogn. Pottskad, Ogn. Pottskad, Ogn. Spr. 798. — Liniment J. W. Still, S. F. Spr. 946. — Harning Pripe Connection Between 378.946. — Hearling Pripe Connection Between Cars—W. L. Harlingen, Sr. & Jr., S. F. Cars—W. L. Harlingen, Sr. & Jr., S. F. Green Worst.— Oppies of U. S. and Foreign patents in the laborate time possible (by mail by Dewey & Co., in the shortest time possible (by mail to be projected time patents obstance, and general patent business to Pacific Despite order). Attaction and Foreign patents obstance, and general patent business to Facility patents obstanced and sentity at reasonable frame.

## New York Metal Market,

Telegraphic advices dated Nov. 17th give the following we York prices:

Telegraphic advices dated Mov. IVbp give the following way (and Yor Year) with York Prices:

Application of the prices of the following the prices of the pr

## WHOLESALE, San Francisco Metal Market,

_		8	98	Flasks, old
_		m	90	Flasks, new
00	cı	(B)	00	OG TO THE PARTY OF THE PAR
		200		Outoksilver—By the flask
25	4	8	94	d langual l
90	ç	D)	00	TIMPLATE-Coke
91		இ	OI	Maylor & Co
g		$\boldsymbol{v}$	TV.	Machinery
ç		(b)	Ţ.	Plow
_		20	6	Black Diamond, ordinary sizes
22		(g)	9T	STEEL-English, Th.
-		<b>D</b>	02	Chilled, do
		0	00	Buck, & bag.
-		8	08	SHOP, GISCOURE 10, OH OUR DEOD, WORLD, TO DEO
		Ø	8	Sheet. Sheet, discount 10% on 500 bag. Drop, # bag. 1
92	g	0	09	
92	Ç	8	00	
03	×	*		5 Teacher
		200	00	Shotts, Mo. L.
•		9	20	Olay Lane White.
	П	-(4)	09	Oregon Pig, ton33
00		E 19	-	Eginton, ton
00		Œ		Eglinton, ton
00	01	<b>@</b> 3	-	IRON-Glengarnock ton
31			61	Fire Box Sheets
13		0	124	Ingot:
-		80)	6I	Sheathing
13		ø)	6t	Bolt,
		_		A3440U
Fg		0	G	Armagosa
8		00)	\$ 2.	BORAX-San Bernardino
_	ı	20 ·	16.	ANTIMONY-French Star
.,	88	21 '	21	THURSDAY, Nov.

## Bullion Shipments.

We quote shipments since our last, and shall

we quote surpments since our tasts, and shall appress be quote surpments since our tasts, and shall be glossed to receive further reports:

Richmond Cons., Mov. 15, \$28,919; Pollock, 16, \$15,104; Lexingfort, 15, \$15,104; Lexingfort, 16, \$15,384; Sluder Bow, 12, \$15,104; Lexingfort, 16, \$25,384; Germanis, 16, \$1715; Haraner, 10, \$1713; Haraner, 10, \$1713; Haraner, 10, \$1713; Haraner, 10, \$1714; Haraner, 10, \$1714; Haraner, 10, \$1715; Haraner, 10, \$1716; Lexingfort, 10, \$1716; Le

## Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subgreed to examine its contents, terms of such satisfies and give it their own patronage, and as far as practicable, as its value more widely journal, and making its value more widely known to others, and extending its influence in take, \$3 a year. Extra copies mailed for 10 cents, it ordered soon enough. It stready a subscriber, please show the paper to others.

# SEAN ISON ESS. Send for Chronier.

sporthand, Typewriting, Fermanship, Bookkeeping.

The Progress of Kansas.

bions of the Great West, bidding high for imto the Republic. The increase of population here has for the past ten years been at the rate of nearly 100,000 per snnnn, and that with the rich mining state of Colorado, and other portion of the rate of the ra sionary labor, and later on the field of deadly conflict between freedom and slavery, should stand to-day one of the most prosperous States to only the trapper and those engaged in misgreatness as Kansas. It seems incredible that a country so recently the border-land of the West, the home of the Indian and interesting rapid advancement in every element of material over this panellet, of more than 100 pages, one is astoniaphed at the progress made by that State in population, wealth and improvements. Though in Statehood 11 years younger, Kansas contains more inhabitants than California; no member of the Union has, in fact, made such replaced the contains the conta Historical Society lies on our table. Looking The Fifth Biennial Report of the Kansas

over her, would be a desirable place of abode to those not apoiled by long residence in Caliwinters and the cyclone that occasionally dances growing; and were it not for her rather cold стевней attention. Kansas contains at least half a dozen large cities, all young and rapidly metals. Thus far agriculture and stock-raising have been the leading industries, though it is probable that mining will hereafter receive inknown to be rich in coal, iron, and lead, with no inconsiderable deposits of the precious term products resching over \$100,000,000, mean teaching of her manufacturing and products, also quite large. As yet submyord mining has been doen does of the State, stong it is been for an indicate the state. and from every quarter. Her property valuations exceed \$400,000,000, the total value of her anivarine mountains are tree from mountains and marsh lands, and lies on several of the great transcontinental highways, attording unwonted statilities for receiving and shipping Ireights to add the mountain and the mountain and the mountains. and even her mining resources consider-able; her climate is favorable; she is tolersoil, her agricultural possibilities being great, migration. But Kansas enjoys many advantages, both natural and acquired. She possesses a rich

## The Better Way.

their differences through recourse to some of their differences through recourse to some of their differences through recourse to she to the present plan of litigation. To us it seems that much might be gained by the set of the present plan of litigation. To us it seems that much might be party to be some that much might be to use to consideration and settlement. It ought to be a very grave interest that would warrant to be a very grave interest that would warrant the anxiety, suncyance and delay attendant on an ordinary lawant. As a rule, better abadon as briting to a trilling claim or suffer a perty wrong than seek redress by taking your case into court, where, it siter much vexatious delay you succeed in getting a favorable vertict, the fees of lawyers and witnessess and the other expenses incidental to the proceeding will, in three cases indicants to the proceeding will, in three cases out of four, more than equal the amount recovered. would not be better to seek an adjustment of Now that Peace Commissions and arbitra-tions are the order of the day, it might be well for the mining community to consider if it

out of four, more than equal the amount irecovered.

Nothing so embitters neighbors as a lawsuit,
Aching so embitters neighbors as a lawsuit,
especially where the amount involved is small,
or the case becomes protected. Men, and often
entire families, have by just such procedure
been made enemies for life; whereas, these hard
feelings, had the matter in issue been left to
referees for settlement, would have speedily disspecial. This latter is not only the most senspecial as as general thing, it proves also the
sible, but, as a general thing, it proves also the
sible, but, as a general thing, it proves also the
sible, but, as a general thing, it proves also the
sible, but, as a general thing, it proves also the
sible, but, as a general thing, it proves also the
sible, but, as a general thing, it proves also the
sible, but, as a general thing, it proves also the
sible, but, as a general thing, it proves a series of an in ming constituencies.

## Mining Share Market.

The mining Share Market.

The mining share market is rather quiet, and there is not very much being done. Absorbere he not very much being done. Absorbere he not very much being done. The versthere is not very much being done. The versthere is not very much being done. The 1435-foot provement at several points. In the 1435-foot based through some ten feet of high-grade of the Orown Point mine, they are cleaning out the south artites on the 500 levels of 500 levels of preparatory to sending these openings absorbed, else, preparatory to sending these openings absorbed, to see a secretain more fully the extent of the ore vening found on the 400 level, and which may use in such the 100 levels, the continue up or down from that point in greater week's work has been wholly confined to envesting out.

The ore developments in the consolidated drifting out.

The ore developments in the Consolidated california and Virginia are said to be of much California and Virginia are said to be of much California and Virginia are said to be of much greater magnitude than outside people have any piece of the nore any present of the navel are such than the said of the navel and the said to be of much greater magnitude than outside people have any piece of the navel any piece of the navel.



## ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Tramcars, Elevators, Signals and all kinds of Electrical Systems for lighting and samission of power, either direct or with storage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

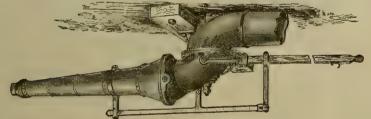
The only complete and satisfactory incardescent system. Lights require no attention and are under complete con-trol. Over 500,000 lights in use in the United States SELE-TECTULATING. ARC LIGHTS turn ught into day and afford a means of working the whole Sk hours; Invaluable to contractors and others to whom time is an object. Estimates and designs on application.

FORM OF

IMPROVED

# Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

HYDRAULIC



The above cut illustrates the IMPROVED FORM OF DOUBLE-JOINTED HYDRAULIC
A MTS, with love attachment, which we manufacture. All similar styles are intringements upon this love,
a judgment stands of record to that teffect, under a decision of Sawyer, Judge of the U.S. Circuit Corrt, in the
it Heady and Fisher vs. R. Hoskin et als.
We also manufacture the "Ingle-Jointed Giants."
We also manufacture the "Ingle-Jointed Giants."

JOSHUA HENDY MACHINE WORKS,

39 to 51 Framont St., San Francisco, Osl.

GIANTS.

IMPROVED

HYDRAULIC

MACHINE,

E instead of two. It is not greeker compacity and more easily worked as kept in repair. The statement of Mr. Hendy that ck styles are intring ments on the machines made by him, he knows to be utterly false. A monts on the machines made by our new style over jointed machines, while appeals to L. S. Suprement, with absoint melevence to other dup on appeals to L. S. Suprement, with absolute certainty of a reversal in our kwor. Miners and i parker, with absolute certainty of a reversal in our kwor. Miners and i pakeryer, referred to by our new style over will prosecute to the fullest of the configuration of the control of the control of the style of Glant, we will prosecute to the fullest of the control of



CALIFORNIA WINE COOPERAGE CO. WATER TANKS, WINE TANKS!

ALL KINDS OF CASKS, TANKS, Etc. San Francisco 30 to 40 Spear St., EULDA BROS., Proprietors,

FOR SALE. SHIP, MINING, and WATER TANKS a Specialty.

VERY CHEAP. Apply 130 Sabsome St., room 12. 2 Triumph Concentrators. I Mew 12-inch, 35 H. P. Engine.

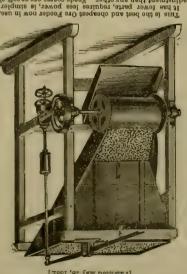
San Francisco Cordage Factory

Batabilahed 1856.

611 and 613 Front St., San Francisco.

Consciently on many described the stope; — , and the stope of the stop antly on hand a full assortment of Manila Kope, pe, Tarred Manila Rope, Hay Rope, Whale

THE ROLLER ORE FEEDER



ewer parts, requires less power, is simpler in at than any other. Feeds coarse ore or soft clay ormly, under one or all the stamps in a battery d.

Golden State and Miners' Iron Works.

Sole Manufacturers,

Ores, Mining, and Commission, HORACE D. RANLETT,

420 Montgomery St., S. F.

DUION COPPER MINE, CORPOREROR.

UNION COPPER MINE, CARACOR.

OUTCON COPPER MINE, Amedor Co.

Correspondent as Agent for Smellers in London, Liverpool, New York, Socion and Baltimore.

Twenty years everyeriance, in California, purchasing Ores
and dealing in Mines.

Special attention given to management and sales of
mines and purchase and shipment of copper produce.

mines and purchase and shipment of copper produce.

Under good bonds, several first-class fold Quarkz Mines, located in Amador county on the true lead; well de-located in Amador county on the true lead; well de-play for mills. Samples and all particulars at office above. COLRTZ MINES FOR SALE,

HHH



JOHN T. SULLIVAN,

Boot and Shoe Maker.

Ploneer Building

Maker of the famous Miners' Shoe.

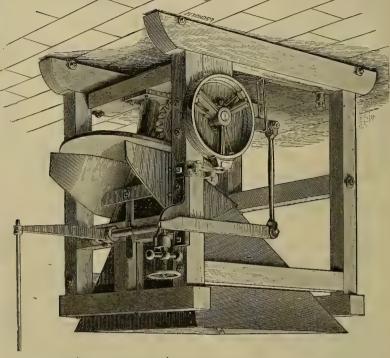
20 Fourth Street,

Goods sent by mail or express.

Practical Treatise on Hydraulic Mining.

**102HOA HENDY MACHINE WORKS** 

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



The best form of Feeder ever devised, and pronounced by reputable mining men to be fa "HENDA" IMPROVED "OHALLENGE" ORE PEEDER.

auperior to any form of "Roller" Feeder manufactured. We refer to the follow-ing gentlemen who have furnished as with testimonial letters to the above effect, which can be seen at our office, viz.:

И. Своскев, Supt. Bunker Hill Gold Min. р. О. Wicenam, Taylor Mine, Greenwood, Cal. ing Co., Amador City, Cal. Mining Co., Amador City, Cal. Wining Co., Amador City, Cal.
 И. G. Robertz, Greenwood, El Dorado Co., Cal. Mining Co., Amador City, Cal.

"CHALLENGE," "STANFORD," "TULLOCK," & "ROLLER" FEEDERS,

And will furnish descriptive Catalogues and quote prices upon application.

# Iron and Machine Works.

CALIFORNIA MACHINE WORKS,
WO. 119 Beale St., - San Francisco
WA. H. BIRCH & CO.,
WA. H. BIRCH & CO.,
THE BEALE ST., - San Francisco
WO. 119 Beale St., - San Francisco

Brodle Rock Crushers. Steam Power, Hydraulic, Side Welk and Hand-Power Steam Engines, Flour Mill, and Machines Machines (1972)

HELEVATORS. \*
Manufacturers of R. E. Herntcheon's Patent Automatic Safety Catches for Edvators. All linds of machinery made and repaired. Selections.

## SAORAMENTO, CAL. UNION IRON WORKS,

ROOT, NEILSON & CO.,

Steam Engines, Boilers,

MACHINERY FOR MINING PURPOSES.

Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired. Front St., bet. N & O Siz., Sacramento, Cel.

## Golden State & Miners Iron Works.

Marufacture from Castings and Machinery of all Kinds at Greatly Beduced Bates.

STEVEUSON'S PATENT

## RAOTAMADJAMA braod-bloM

First St., between Howard & Folsom, Sts Golden State Pressure Blowers.

EUREKA FOUNDRY THOMPSON BROTHERS,

129 and 131 Beale St., between Mission and Howard, S.F.

MANUFACTURERS OF CASTINGS OF EVERY DESCRIPTION.

WAILIFAMS & OTTOIL, MACHINERY, WANDERS WAS UP GENERAL MACHINERY.

Special attention given to Woodworking Machinery, Steam and Gas Engines. Correspondence solicited.

## MINING ENGINEERS.

MINING EXPERT AND GEOLOGIST. Civil and Mining Engineer, W. A. GOODYEAR,

ROSS E BROMNE'

No. 307 SAXSOME ST., SAR FRAKCISCO. Mining and Hydraulic Engineer,

SAW COMPANY N. W. SPAULDING



ade nade to order. Send for Descriptive Cata-SAW MILLS AND MACHINERY

WEGTERAS IN A



BACE Fires of the Mixivo and Scheriffe Parse (un-pound) can be lad for 35 per volume of six months. Fer year (two volumes) \$5. Inserted in Dewey's patent bind-er, 60 cents additional per volume.

SHIPPING AND COMMISSION MERCHANTS, NEWHAL

309 and 311 Sansome Street, San Francisco, Cal.
Agents for Growers and Manufacturers. Constrears of Vessels for all Trades. Agents
for the Maxican Phosphate and Sulphur Company's Products.
General Insurance Agents.

General Agents for the Pacific Coast of WATIONAL ASSURANCE CO., of London; BOTLSTON INSURANCE CO., of London; BOTLSTON INSURANCE CO., of London;

PACIFIC ROLLING MILL CO.,

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength tonghness and durability to Oast or Wrought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from † to 3 inch diameter and Flats from I to 8 inch. Angles, Tees, Channels and other shapes Steel Wagon, Borggy, and 1904 Three, Machinery and Special Shapes Steel to size and locative Steel States, from 12 to 45 pounds per yard. ALSO, Hailroad and Merchant Iron, Ridge and Jachine Bolls, Las Sevenes, Nuts, Washers, Ship and Boest Steamboat Shafts, Grants, Persons, Connecting Rods, etc. Car and Locomotive Axles and Frances, Bridge, Cranis, Iron, Fridge and Jachines, Steamboat Shafts, Grants, Persons, Connecting Rods, etc. Car and Locomotive Axles and Frances, and Iron, Frances, Bridge and Morty Steel Specialty.

HIGHEST PRICE PAID FOR SCRAP IRON AND STREE.

PACIFIC KULLING MILL CO., 202 Market St., San Francisco.

HINOKLEY, SPIERS & HAYES, Proprietors.

(ESTABLISHED IN 1866.)

SOU FIRMCISCO.

-NANUTACTURERS OF-

MARINE ENGINES AND BOILERS. Propeller Engines, either High Pressure or Compound Stein, or Side-wheel Engines.

MINING MACHINERY.—Holsting Engines and Works, Cages, Ore Buckets, Ore Cars, Fumping Engines and Pumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

Crushing, Amalgamating Pane, Settl rs, Furnaces, Retoris, Concentrators, Ore Feeders, Rock Breakers, Furnaces for Reducing Ores, Water Jackets, etc. MILL MACHINERY.-Batteries for Dry or Wes

MISCELLANEOUS MACHINERY.—Flour Mill Machinery, Saw Mill Engines and Boilers, Dredging

rastinys Pulverizer Machinery, Powder Mill Machinery, Water Wheels.

WORKS ORE WET OR DRY.





Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

VORKES LOW LINE SUCHAIC COVER LOW LINE Ov Everat Description, over the Boiler Repairs Frompily attended to and at very moderate rates.

Deane Steam Pump.

SPECIALTIES:
Corlies Engines and Tuetin Ore Pulverizers.
DEANE STEAM FUMP.
Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heafer.

Geo. W. Diceir, Manager. J. O'B. Gunn, Secretary,

H. T. Scorr, Vice-Pres. and Treas.

Location of Works, Potrero. P. O. Box 2128.

Office, 216 Market St., S. F.

GRO. W. PRESCOTT, President,

-BULLDERS OF-

Damp. Agents of the Cameron Steam STEAM, AIR, AND HYDRAULIC MACHINERY.

HOME INDUSTRY. ALL WORE TESTED AND GUARANTEED.

BARY HOISTS, VEUTHATING FAUS, BOOF BREAFFRS

CHEAPEST AND BEST IN USE,

SELF-FREDERS, BREAKERS,

VERTICAL ENGINES, HORIZONTAL ENGINES, ACTOMATIC OUT-0FF ENGINES,

SHAFTING COMPOUND CONDENSING ENGINES,

TRY OUR MAKE,

This paper is printed with ink Manufac-tured by Charles Eneu Johnson & Co., 500 fourth 10th & Philedelphia Propertor

Successors to PRESCOIT, SCOIT & CO.

0 4

STEAM PUMPS, STEAM ENGINES,
all kinds of MACHINERY.

**WACHINE WORKS** 

EVANS

110 & 112 Reale Street, to THOMSON & ETANS),

O⊞ce, 40 Mevada Block,

Dynamos and Aotors of all sizes for Conveying Power om Waterfalls for use in Mines and Mills, erected under ananty of performance.

Electric Reliways, and Apparatus for the Electric Transmission of Power.

Storage Baneries.

MOTORS, LAMPS

Keith's Electric Dynamos

Inventor and Manufacturer of

N'S'KEILH

21 & 223 First St., San Francisco, Cal JOHN W. QUICK, Proprietor.

San Francisco Pioneer Screen Works,

Orders promptly attended to.

For Flour and Rice Mills, Grain Separators, Revolving and Shot Seferens, Samp Batteries and all Marks of Mills in Each, Speech, Coppor, Brass, tag and Milling Machinery. Iron, Steet, Coppor, Brass, Minner Manufacturer of the celebrated Slot Cut Inventor and Manufacturer of the celebrated Slot Cut or burred and Slot Punched Success.

On Durred and Slot Funcied North Manufacturer of the celebrated Slot Cut Minner Screens a specialty, from No. I to 15 (fine).

PERFORATED SHEET METAL

Best and Cheapest in America.

BATTERY SCREENS.

GREAT REDUCTION!

SAN FRANCISCO, CAL.

8 California St., and 21 Fremont St.

PARKE & LACY

REPRESENTED BY

For Catalogues, Estimates, Etc. address:

Section 16x16 feet; Length 36 miles.

NEM JOBK

AND FULL DESCRIPTION OF THE WITH MAPS, ILLUSTRATIONS

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in

ENGINEERS, CONTRACTORS,

WINING WEN

NOTICE TO

SEAT FREE ON APPLICATION

INGERSOLL ROCK DRILL CO.

THIRD EDITION NOW READY.

.O

Sactory, Il Stevenson St.

THE RUSSELL PROCESS COMP'Y.

C. A. STETEFELDT, President.

,607 moosi NEM LOEK OLLICE' 18 BEOVDMVL

South 10th St., Philadelphia. Branch Offi-ces-47 Rose St., New York, and 40 La Salle St., Chicago. Agent for the Pacific Coast-Joseph H. Dorety, 529 Commercial St., S. F. Serp for Late Creculars.

STAMPS,

**UNION IBON MORKS**,

(\$212.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OYER 1400 ARE WOW IN USE. Concentrations are clean from the first working. The wear and test are merely nominal. A machine can be seen in working order and ready to make tests at 230 Fromont Street, San Francisco.

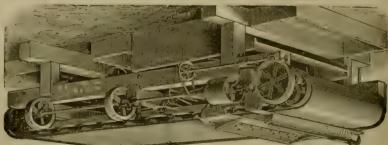
THE MONTANA COMPANY (Limited), N. B.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 additional Frues and more stamps be carried. THE MONTAKE COMPANT (Limited), LONDON, October 5, 1885.

Dear Size: —Having tested three of your Frue Venners in a compositive trial with other similar machines unput, we have satisfied ourselves of the superiority of your Venners ges videonced by the fact of our having reed twenty more of your machines to delivery. Yours truly,

Protected by patents May 4, 1800; December 22, 1874; Soptember 2, 1870; April 27, 1880; March 22, 1831; February 20, 1885; Soptember 18, 1883. Fatents applied for.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

Room 7, No. 109 California Street,



VANNING MACHINE. CONCENTRATOR OBE THE FRUE

# "(OO'OGG\$) FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the colebrated "Triumph" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their frames being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built as compactly as their requisite strength will permit, weight less, regardiness of motion when operated. They are built as compactly as their requisite strength will permit, weight less, replaced in front of and which takes the discharge from the feed and amalgam bows. The improvements is in the recently been introduced into their construction, which consists of a Ripper Table.

An important imported to this table by the longitudinal motion of the stake in the reciprosidation which is imparted to the interfedenced and amalgam bows. The improvements is in the reciprosidation of one of united states are table is at the reciprosidation of the land of important in this districts are interfedenced in the single-factor of the state in the interfedence of the efficiency and superiority of this form of Concentrator, and we shall be bleased to send Ortculus evoluting such letters of testinony, and, as well, directions for sections for stopinons, and, as well, directions for sections to quote special prices for any considerable order.

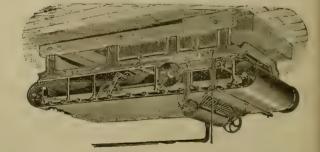
Some and of requisite evoluting such letters of testinony, and, as well, directions for setting up and operating these machines, and are ready to quote special prices for any considerable order.

Some and of requisite sovering and interfered to saved orders.

102HUA HENDY MACHINE WORKS,

San Francisco, Cal Nos. 39 to 51 Fremont St.,

MADE OF BEST SOFT LAKE SUPERIOR COPPER



TRIUMPH" ORE CONCENTRATOR CHEMI

ACTIOE.—All our plates are guaranteed to have the following the first select about the first select action of the following the completion of the following the first weight, made so often before we started in this branch of industry.

JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

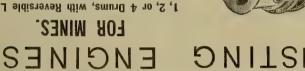
-MANUPACTURER OF

BATTERY SCREENS AND WIRE CLOTH

HADEO-CARBON ASSAY FURNACES Agent for HOSKINS'

HOIZLING

AND PLATING WORKS

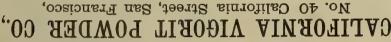


Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link

MADE ONLY BY THE

96 Liberty St., New York. LIDGERWOOD M'F'G COMPANY,

PARKE, LACY & CO. PACIFIC COAST AGENTS,



## ("TVAID" TO "ETIMANYU") NILHO-CILACERINE

Blasting Powders.

FOR REMOVING STUMPS AND TREES, HAS NO EQUAL. Vigorit "LOW" Powder,

ED' G' LUKENS, Manager. WORKS: California City, Marin Co., Cal.

AND RAILROAD CASTINGS. IRON CASTINGS of all descriptions. CHILLED MHEETS CAR

MEDAL AWARDED, MECHANICS FAIR.

OCCIDENTAL FOUNDRY, 137 First 51., San Francisco, Cal.

NORI JANOITAN No. 108 FIRST STREET.

IN QUARTZ, GRAVEL, OR PLACER MINES.

N. W. Corner Main and Howard Sts., San Francisco,

-WANDEACTURERS OF-

and Quartz Mill Machinery. Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES, CASTINGS AND FORGINGS DORCHUES OF EVERT OF

IMPROVED PORTABLE HOISTING ENGINES. LL WORK TESTED AND GUARANTEED.

NATIONAL ROCKER QUARTZ MILL

MARSHUTZ & CANTRELL, Sole Manufacturers. CAPACITY, 12 Tons in 24 Hours, 3 H. P.

The Patentee and Manufacturers coaliging in vite minors to critically cannot be a judgment upon this improved system of milling this improved system of milling particulars:

I. The cost is less than one-half of seeme and amalgametring cores in the following particulars:

I. The cost is less than one-half of seeme and a particulars:

I. The topic of same appears the conclusion of the control of same appears that one-half of same,

I. The worst to less than one-quarton-constraint of sames,

I. The worst to its sames,

I. The worst to its same,

I. The worst to its same,

I. The word to disamps.

I. The word to same,

I. The word to the same,

I. The word to same,

I. The same is no west except on appear to the construction it is appoint to bony other machine in use.

In its simplicity of construction,

I. In its simplicity of construction.

SAN FRANCISCO NOVELTY

FOR SAVING

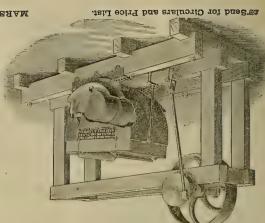
FURNISHED ON APPLICATION,

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

We challenge competition with Stamps, Ball Pulverizers or any other ore crushing machines now before the public. 8. In its simplicity of construction.

MARSHUTZ & CANTRELL.



PORTLAND, OREGON,

SAN FRANCISCO, CAL,

SALT LAKE CITY, UTAH.



Machinery



NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and Iron

BOILER, **HAZELTON** 

A NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER, DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

Supring Valley Water Works, S. F., I 200 H. P. Starr & Co. Mills, Wheatport. ... I 100 H. P. San Dase & Santa Clara Electric R. R. Company.

California Cotton Mills, East Oak.

I 150 H. P. Selby Smelting Works, Vallejo

California Cotton Mills, East Oak.

Janction Mills, East Oak.

Janching Company.

Janction Mills Marketon.

Janction Mills, East Oak.

Janction Mills, Mills Mills, East Oak.

Janction Mills, Mills The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

Harmony Borax Mining Company, Al H. P. Oakland Gas Light Co., Oakland. I 200 H. P. Alameda.

PACIFIC IRON WORKS,

MINING MYCHINEBY,

PLANTS FOR GOLD AND SILVER MILLS INTROGER MILLS

HEINE SAFETY

L. R. MEAD, Secretary.

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY

DURABILITY,

AND FACILITY OF INSPECTION and REPAIRS, ECONOMA

San Francisco, Cal.

Boilers can de seen working in San Francisco at Palace Hotel, Spring Valley Water Work Hueter Bros. & Co., California Jute Mills, and other places. 60,000 Horse Power now in use.

Guaranteed More Efficient than any other Boller made.

KETRICERATING MACHINERY for Steamships, Brewerles, and Collars, WILSON'S PATENT GAS-PRODUCER.

SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarifers, Double Effects, etc.

STEAMSHIPS—Steam Yachts, Marine Engines and Boilers, Screw Propellers, Centrifugal Pur
Pumps, Steam Cargeshar Winches, etc.

STEAMSHIPS of 120asturn Gald Will for the Alaska Mill and Michae of 120asturn Gald Will STEAM BOLLERS of all descriptions

**MATER TUBE** 

OUARTZ MILLS-Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces of all idinds.

AIR COMPRESSORS—Rope Power Transmission.

AIR COMPRESSORS—Rope Power Transmission.

WEOUGHT.IRON WATER PIPE a Specialty. More.—Have just completed order for 85 miles of 44-inch part of the follow Transmission.

WEAM ENGINE MACHINERS for PRING. Some Compound, and the complete of the School of the Compound.

STEAM ENGINE MACHINERS for Pacific Coast of the Celebrated "Heine" Patent Safery Boller Water Water Tube); and ACHENT PATENT STEEL-RIM PULLEYS—Fifty per cent lighter and 25 per cent cheaper than cast-tonn pulleys, will not break in transportation.

Mining Machinery of Every Description, CONCENTRATORS AND ORE CRUSHERS, Centrifugal zijenn

steam Engines and Shingle Machines.

SEND LOE CIECULAR.

SAN FRANCISCO, CAL. No. 45 FREMONT STREET,

## MACHINERY WINING

оке селянев

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc. SLEVM ENGINES'

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco. GENERAL MACHINE WORK,

SHAFTING, HANGERS AND APPURTENANCES

Medart Patent Wronght Him Pulley Seates of California, Oregon and Nevada, and the Territories of Idaho, Was

First Premium Awarded at Mechanics' Fair, 1884.

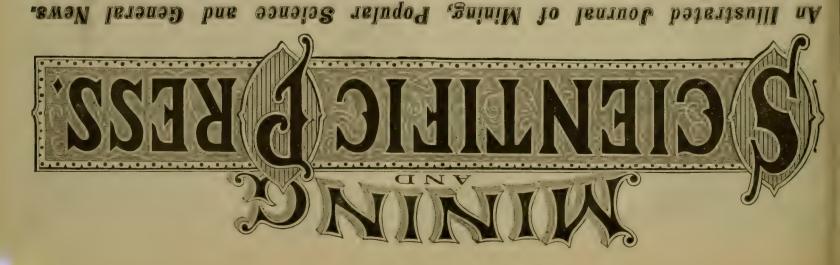
PERFECT PULLEYS

**BOILER**,

Mos. 129 & 181 Fremont Street,

San Francisco, Cal

T & MHBES.



VOLUME LV Publishers. SAN FRANCISCO, SATURDAY, NOVEMBER 26, 1887. BY DEWRY & CO.

on foot to make a harbor at Anaheim | be the repositories of gold, as was at one time

A New Hydraulic Concentrator.

# Frederick W. Robinson has just obtained a

to secretains gaiterages bas gaitertaecace PRESS Patent Agency for a novel apparatus for patent through the Mining And Scientific

with a proper supply of water. Sufficient head betarages ed of lairetam edt beviecer si bas lower or inlet end. Into this sluice at its lower sluice inclining or curving upwardly from the varying specific gravity contained in ores, certh's sands or tailings. It consists of a closed

degree of steepness at the outlet; but the inyna of gaisseroni yllenberg bas faioq fsewol mencing at a nearly horizontal section at the made of varying degrees of inclination, comtube or sluice, having a tight bottom, top and sides. The floor of the tube or sluice may be view of the device. A is the trunk, flume floor causes a constantly increasing resistance and a separation of the particles along the floor. The engraving on this page is a sectional end. The inclination of the curvature of the of water is used to cause the material to flow through the sluice and discharge at the other

era ", seitzzitz " to , sucerra . L esinfa lairetam to vitingane ed teometro of reb sidt figuordt bessag ed teum doidw B, from a hopper or vertical chute, C. with water, is received into the lower end of

The material to be separated, mixed evino a lo mote of this stant of steletor protoco a the entra cutrature at the point stantages of the stanta

the hopper O.

from the supply flume or sluice, and the coarser material—waste rock and ceived apon these screens or grizzlies The material to be separated is reused, etanding at an inclination above

inclination of the tube or sluice. The pressure will be regulated by the supply and the hight or head of water, upon the pressure of the water and the will pass into the sluice, and will flow gaing depending The finer and more valuable material screens and discharged to one side. without passing into the closed sluice. gravel-will be diverted by these

or the depth of the receiver or hopper O, through which it passes. The inclination of the apparatus

may be regulated by means of a hinged

besizt of yam bas egtadesib to retue and taiot may be regulated by means of a ninger the material enters of this new freight tariff, to take effect on December the placer diggings yielding from \$6 to \$10 per Engineers, on the subject of the 'Irreg' the ower end of the shure. By means of this new freight tariff, to take effect on December the placer dightings yielding from \$6 to \$10 per Engineers, on the subject of the Place Forcess." In institute and or these ord may be raised late. The classified rate for ores will be as day wages. If failure under these circum listities of the place from the subject of the place from the subject of the place or and the subject of the placer the subject of the subject of the placer the subject of the subject of the subject of the placer the subject of the placer the subject of the placer the subject of the subject of the placer the subject of the placer the subject of the

will prevent the heavier particles which it is will prevent the heavier particles which it is place has come clean to the tront, constituting now the leading branch of the industry. from or bottom of the sluice antil the rising inor depressed, so as to vary the inclination to suit the work to be done.

The particles will be distributed along the

The operation is similar to the drifting of sand by the winds. The common earth, sand tiele acting frictionally upon the inclined surface. velocity of water, carrying it forward until an equilibrium is catablished between the force of the water and the resistance offered by the par-All this seems to the pioneer like a second desirable to retain from going any farther. Each particle will be controlled by a constant

.000,000

the three districts.

the proposed harbor.

either of which cases work is to commence on

bly the rancho itself will pass into its hands, in

owners of Los Alamitos rancho, and that possi-

Mr. F. W. Robinson has assigned this patent to L. L. Robinson, the well-known mining man, 320 Sansome street, in this otty.

Pasadena hold in deposit more than \$16,

and \$3000 in concentrates, making \$40,400 in all. This amounts to over \$4000 per stamp.

moillud ni 032,76\$ asw redotoO lo dinom edi

made on the Salmon-river mines; that is, in the Obico districts—Ruby, Salmon and Limestone. Etdby takes the lead. There are 600 miners in

IT is stated that 3000 locations have been

from \$6 to \$8 per ton and limestone rock at \$6.

are valued not to exceed \$100 per ton the rate will be \$6; coke and bullion will be rated at

per ton; for ore not to exceed \$150, \$8; for

tollows: From Clifton to Lordsburg, for ore 00.018 bd %10.60 valued at \$200 per ton, the rate will be \$10.60

lat. The classified rate for ores will be as

THE output of the Jay Gould (M. T.) during

THE banks of Los Angeles, San Diego and

and gravel will pass rapidly to the waste outlet, and the heavier materials will only climb the pass and the bottom until they reach

through which the auriferous earth, waste rock and water were hoisted to the surface, genertimes by means of shafts sunk to bedrock, and in gold. nia many dasin shaped flats known to be rich in gold. These flats were exploited in former

There occur in the mining regions of Califor-

considerable setback, the same having been also ceived in the early fifties, met afterward with a

bed and drift mining, after the impetus they re-

into notice in the spring of 1851, through the discoveries made at Gold Bluff. Both river-

with the beach sands, first brought prominently

Thus, not for a long time was anything done

most abandoned some of these lines of mining.

deavore, relaxed their efforts and for a time al-

miners, disappointed with these, their first en-

strange; nor is it cause for wonderment that the

certain classes of deposits, it is not at all

day wages. If failure under these circumstances occurred in the attempts made to work

these having been made at a time when the

that they were fallacious as that the at-

most of these theories has been, not so much

nor has the dredging of the river-beds been

But the trouble with the

found practicable.

TYPES OF MODERN WESTERN FURNACE PRACTIOE.

the ord of Garaion of Ores, The Olithon (Arizona) these having been made at a time when the control of the 19th inst. says: The Arizona has a sentitemely dest, and when at a long ordinary Merican of the ordinary will issue to-day a leaverythin, labor included, was extremely dest, or included, was extremely dest,

Landing. It is reported that a wealthy syndi- expected. Neither the quartz nor the beach cate has received certain concessions from the sand have paid according to early expectation,

ROBINSON'S HYDRAULIC CONCENTRATOR.

the case with quartz operations.

While many of the early theories entertained in regard to the auriterous deposits of oblicor-The Second Growth of Mining.

nia have been exploded, the soundness of others

ance offered will prevent them passing beyond. the point where, as before stated, the resist-

SAYS the Santa Monion Outlook. A project still pools along the rivers have not proved to

to se and t bootstell under the abitudes of the se ment bootstell under se saisse esset to bigh to answer the purpose intended. Occasionally they were found to be too low, thereby a consistent and they are repeting by the state. Stillful engineers were rether every in these of stilling and a state is the abstract. indeed in more than a few cases, were they ever completed, And when completed, it sometimes happened that they were run on levels work them. But as these tunnels required usually to be of great length, not always, nor bas aisrb ot doidw agnords asvirb erew sleaant ones ally with a send wind with send a store one state only with brand water it was found board and only with the send in some instance and the man should be desired the send of the send

tressures abundantly, the tunnels formerly prothen done, are being made to yield up their dreamed of in early days; while many of the gold-bearing basine, with which so little was tensive than was ever attempted or even cene channels, the latter the sites of drift opera-tions, are being worked on a scale far more exbranches of mining has been undergoing gradual enlargement. The river-beds and the old Plio-For the past 10 or 12 years each of these

deposits. jected and partly completed having since been the interest of a partly completed for opening and the same and

One of the form of the manual special of the content of the conten

product. They are things that will serve a good keep and things that will serve a good noillud une ot glergely to our bulling with profit, oresting new demands for for future experimentation. We fore-see a day when they will all be handled the rivers and canyons, to say nothing of our low-grade ores, though now neglected, are simply held in reserve gaola betalumuosa sgailiat oiluanbyd to selititarnp teav ent bas sbass dosed deposits now overlooked, and, in fact, considered well-nigh worthless, will yet be handled with profit. The

end in after times.

Blast Furnaces.

In recent numbers of the Press we have quoted from a paper by Edward Walsh, Jr., of St. Louis, read before

noticed that there is great variety even in these figures on the engravings. It will tended to show. The dimensions are given by practice. The figures will explain themselves, as it is merely the " lines" that the outs are inand abroad. We reproduce several of the drawings which show the modern "Western" showing the past and present practice at hor eguiwarb to redmun tastg a regaq aid tot betesl by the traditions of the practice, and by the literature of the subject. Mr. Walsh has colthe variety of forms heretofore, and now in use, blast furnace is very defective as attested by gard to the shape or "lines," he says that the variety in the form of furnace in use. this paper he shows that there is a very great

THE quartz-mining interests of Sierra county types of one region.

oitibaco gaidairach a ai era

Forestry in California,

At the recent Fruit Growers' Convention, in Santa Ross, the question of lorest preservation

of which we expect to present considerable por-tions hereafter. At this time we choose but a single paragraph from the address and append and extension came up.

The subject was introduced by Hon. Abbot Kinney, president of the Forestry Commission, in an admirable and carefully prepared addresses as radial subjects are required to the control of the co

tion of the measures which the friends of fortions of she measures which the friends of forthe state needs very different treatment
from a torest point of view in its different sections. Parts of it would be promptly ruined by
the removal of even extensive areas of mountthe removal of even extensive areas of mountthe removal of even extensive portions of the
area in a reasonable manner, as on the Mortelstate in a reasonable manner, as on the Mortelstate in a reasonable manner, as on the Mortelstate plantations of trees should be made as
made purposes, as well as to give local supplies
made and timber, while in others there
may be an advantage in the decision in such matters
of thre-wood and timber, while in others there
should come under the control of an incelligent
should come under the control of an incelligent
should come under the control of an incelligent
commercial outfings in the forest to prevent
production in the forests; to prevent and put
production in the forests; to prevent and put
production in the forests; to prevent and put
of forest products as at least to pay the cost of
management.
The rapid extrangetion of forest products
as at least to pay the cost of

therete the resolutions adopted by the conven-tion, so that our readers can have early informs-tion of the measures which the friends of for-

streeted on the ground, the camp would be a succeed on the ground, the camp would be a succeed on the ground, the camp would some succeeds.

In Silver City district has been found as one of the richest mines in the Territory. It is impossible to give in this street of the country of the cou Wine miles from Silver City, is the low-grade camp of the county. Inexhanstible bodies of low-grade of the county, in the camp would be sing, which will mill from \$10 to \$20 per ton. The one can be mined cheaply, it being in large deposits, and by reduction works being serected on the ground, the camp would be a success.

One of the pioneers of the American petron can determine the process of the process of the confine the

A Petroleum Gas Candle.

Georgetown, N. M., Nov. 10, 1887.

The Central City, cessful. They own upward of 50 patented

**CORRESPONDENCE.** 

We samit, unindorsed, opinions of correspondents.—. Eds.

New Mexican Mines.

Mineral Fields of Grant County.

Hertors Press:—Since my last communica-tion, work has been steadily progressing at the new camp of Villines and vicinity. I shall in this letter give an outline of the principal mines in

18,000 equate miles, it is watered by two rivers. The Gila rises on the west of the Motivors. The Gila rises on the west of the Motivors, fower in a westerly direction through Arizons, emptying into the Gulf of California, The Mimbres has the source in the same range but flows in a southeasterly direction. While mining is and probably will be stock-raising and farming are very important factors, Nature has abundantly supplied its stores, for the mountains are covered with time ber, plains with rioh grasses, and the water apply is simply immense. the northern part of Grant county. This county is situated in the southwestern portion of the county is situated in the southwestern portion of the Territory, and is bounded as follows:

On the north by Scoorro county, on the east by Sierra, on the south by the Republic of Mexico, on the west by Arizona. The county contains on the west by Arizona. The county contains 18,000 square miles. It is watered by two rivers, The Gills rises on the west of the Morning of the M

Mining Resources-Geological,

eupply is simply immense.

Geologically speaking, the southwestern portion of this country all belongs to the Laurent time period contraining metanorphic and crystaline period contraining metanorphic and crystaline rocks. As there is a difference in the formation on the demarkation line, beginning formation on the demarkation line, beginning on the above point and traveling southweeter.

If, it is well to observe that this idea is illusive, owing to the stack the ine of breakage boing so plain that it can be traced for miles). On the continue of the stack of the condition between the point of the continue of the case of the case of the continue of the case of the continue of the case of the continue of the case of the case of the continue of the case of the continue of the case of the continue of the case of the case of the continue of the case of the continue of the case of the continue of the case of the case of the continue of the case deposits in general lease of the true that in the stratifical rocks was been then the case of the continue of the case of the case of the continues to the case deposits in conditions in a clearly defined and continues to the case deposits in the case of the continues of the case of the continues of the case of the continues to the case deposits and disappears and disappears and disappears and as different pass of devent of the case of the continue of the case o

The principal mines at Georgetown are as follows: The Natiad Queen group was discovered lows: The Natiad Queen group was discovered about 1874 and now belongs to the Mimbres Mining Co. Millions have been taken out of this group. The mines now leased by T. B. Pheaby of California are producing has deadenedy. The ores are free milling, the company having a mill on the Mimbres, working the ores by a mill or the Mimbres, working the ores by a milling and principal and provided the mines are all worked on tribute; the silver ores are oblorides. The commercial, adjoining the Maiad Queen, is about the best mine, just now having the some of our Asitiornia miners. The Parapet Mining by C. O. Smith, who rose from the ranks of or our Asitiornia miners. The Parapet Mining Co., joining the Commercial, is now owned by the lease. The seeping a Do-stamp mill constantly in operation. Several other good mines are worked by the lease. From here to the new samp Viitness of the laster of the mines are worked by the lease. From here to the new camp Viitness is a mineral belt 10 miles in length.

Looks well. The miners are shipping some ore which yields about 32 ounces in silver and 40 per cent lead. A great many of the miners, after doing their assessment work, are now earnp is destined to come to the front as soon camp is destined to come to the front as soon as reduction works are put on the ground. Foley, MacKeen & Co. have struck very rich ore between the new camp and Georgetown, ore between the new camp and Georgetown, dothing has been said about it, but the owners have ore which they claim will run 2000 ounces. The New Camp

The Santa Ritta copper mines are aix miles from Georgetown. These famous mines were from Georgetown. These famous mines were garbening Mexico with its copper coinage. They were closed by the hostlity of the Apaches in Mexico with a few opened with any system. They have been opened with any system. The mines in 1882 were bought by Jerome B. The mines in 1882 were bounded a large cash capital for developing them. The Santa Lita copper mines were once considered the richest capital for developing them. The Santa Lita copper mines were once considered the richest in the world, but now the camp is almost described with the company did not seem to be succepted. MINES MOT FOUND, BUT MADE.—Mining in Manes of peatoreurs, and Cunnison county is as yet in its infancy, and those people who were impatient to see bonser years ago without any effort on the part of man years ago without any effort on the part of man will see some very rich mines yet developed. Experience has tonch from the part once are not found, but made. It is true that once in great while very rich mine, but the great made, of the search of jority of rich mines to-day are the result of stilled labor guided by experienced men, which before any return is given, It is a mistaken before any return is given, It is a mistaken before any return is given, It is a mistaken hid mine will he be other hand, we arroth mine will he be other hand, we contend that one never learns too munch and contend that one never learns too much about minning,—Eik Mountain Pilot. Santa Rita.

THE DAVY MINERS' LAMP,—It is a shock to all our youthful prejudices, but it is need out of all our youthful prejudices, but it is endoubtered and self y a face, that the Bavy hamp no longer tignes among the safety apparatus of our mines, point. An alteration made in the bill when it point. An alteration made in the bill when it was before the House of Lords left us doubtful was before the House of Lords left us doubtful demned, but Mr. A. H. Stokes, a Government the Obesterfield and Midland Counties Institute the Chesterfield and Midland Counties Institute the computer of the lamp that the lamp is doormed. At the same meeting the fairt prate was bear to examine the workings for gas; but, as the to examine the mines will constity of air feet names in a number only candles have less by the fact that the lamp is accounted the miners walk and the conticute of the considence that explosions have been been of the miner will consequence of the addensity it is explained rate of the miners walk and allowed the conticute of the miner will consequence of the bary lamp. The discovery is useful, but it is a case of good by to another illusion.—

London News.

A Monter hand one he passed through molten.—

A Monter hand one he passed through molten. or the state of th

Mining in Mexico.—Mr. Oharles W. Brit. apidly becoming.

Mining in Mexico.—Mr. Oharles W. Brit. apidly becoming.

Jindependence last Friday, says the Inyo kw. dependence last Friday, says the Inyo kw. dependence last Friday, says the Inyo kw. dependence.

Jindependence last Friday, says the Inyo kw. dependent.

Jindependence is the Interest of the Index the Index Index

Inter It will be entatined by public sentiment in the theorem of the content of the content of the content of the content of Colorado read a content of the colorado read a colorado reada a

A Moist hand on he passed through molten for the bound on the passed through molten for the bound of the Eighth Convention of California Parts Dearts on the California Parts Dearts of Protestry in seek. In like manner gun-cotton can be hurned on the centration of such a tract of the hand and no heat felt, the moisture absorband to seek, and recommend the project to ing the heat as fast as it is evolved, redwood forest, and recommend the project to ing the heat as fast as it is evolved. remarks, The rapid destruction of the red.

WHEREAS, The rapid destruction of the red.

wood forests of this State will entail permanent
loss to the beauty of our cosst counties and already threatens the water supply, and consertendy the fruitfulness and healthfulness of
those counties; and
Whereas, The perpetuation of a large tract
of cosst redwood will be of continuous economic
of cosst redwood will be of continuous economic
value and of continued and increasing interest
values and of continued and increasing interest
to science;

THE art of paper-making has reached a point where a tree may be out down, made into 36 paper, and turned out as a newspaper in 36 nous.

The Yankee Fork Country.

The Yankee Fork Country,

A correspondent of the Salt Lake Tribune.

A correspondent of the Salt Lake Tribune.
The Caster mine when discovered was a front set of the Salt Lake Tribune.

The Caster mine when discovered was a bountain, two thousand feet above the fiver. The ore was the bousand feet above the fiver. The ore was consinual process of the leake show what one great expects of the fedge stood out in one great expended makes. This was what one great expects of the fedge stood out in one great exposed makes out the fact of the build-bounded out in the build-build build build

30 stamps and is one of the most complete in the complete in the country.

The Custer, Unknown, and Summit mines are not producing much now, the bulk of ore coming trom the Bardesr. The mill ships bulk but to the value of \$25,000 per month, but will be up to the value of \$25,000 per month, but will purohased—gets to yleidings a supply for the etampe. This mine was purohased two months ago; a road a mile long has been built, buildings erecked, and much done toward open ing it up. All ore on Custer hill is bauled or the mild in care to the ore-house and then taken to the mild hy means of a wire-rope tramway 3700 teek long with a descent of 1400 teet in that the the mild by means of a wire-rope tramway 3700 teet long with a descent of 1400 teet in that sides to there are cortain seasons, who are given contract work.

The mild crushes 40 tone of ore per day, Salt stain all or the teet in the state of states of the state of states of the state of the state of states of the states

Тре Сратіва Dіскера The mill crushes 40 tons of ore per day, Salt Coatract work.

The mill crushes 40 tons of ore per day, Salt costing \$60 per ton is used in proportion of one to three per cent, Summit ore rear shout \$30, of which 75 per cent is gold. Continental ore runs \$40, of which 15 per cent is gold. The company has 5000 cords wood on hand, and in all has at lesst \$60,000 worth of supplies. Mr. M. L. Crafts is superintendent of the property and it appears to be well managed.

Property is located in a hill on the opposite side of Yankee Pork from the Ouster, and it promises to become a great property in the near future. A few months ago it passed into the hands of the man-location, Eugland, company, and under the management of M. Treweek of Salt Lake City. On agament of M. Treweek of Salt Lake City. On the control, he sent Wm. McQueen here, at one of the most difficult times to reach this assuming control, he sent Wm. McQueen here, assuming control, he sent Wm. McQueen here locality. It was such severe weather and so locality. It was such severe weather and so much snow that Salt Mays was required for men much snow that Salt Salt here and at once began work, immediately on their and at once began work, immediately on their good acred he been dug from the mine to timper on January Salt heat. Since then a surival on January Salt heat. Since then a ber, one mile, requiring much labor; the old ber, one mile, requiring much labor; the old striper, a station has been cut over the shaft station has been cut over the shaft such deeper.

The control of the tunnel, and the shaft has been such deeper.

The control of the out is SOx3S feet, SS feet The control of the station ont out is SOx3S feet, SS feet

sucher; a station has been cut over the shatt state or and are been calified 250 feet 590 feet in the station as been cut over the shatt been such each of the station or out out is 20x32 feet, 28 feet and a been piaced as steam boilst which dump fibe as been piaced as steam boilst which dump fibe as been piaced as steam boilst which dump fibe as the control of the tunnel and steam is carried in mouth of the tunnel and steam is carried in the station of the tunnel and steam is carried in the country protected pipes. Ample buildings for the country protected, and everything gotten ready for starts at a some colose for the present. All of this work was done or came to close down long's mouth of the country at an office, when word came to close down for the present. All of this work was done or the present. All of this work was done to the present. All of this work was done to the present, besides laying in 780 cords of the present. All of this work was done walse of three improvements amounts to about a samples 120 conces aliver and strain the town of the compartment of the search of ore which assays 110 conces aliver and strain the core, and are down on the compartment wind be conformed to be only temporary. At the bone of the control of the search of the conces aliver and \$3.4 conces aliver and sto found on the past about \$300,000 according to wind deep. The mine has two veins on the above, wind the past about \$300,000 according to the need to make a profitable in very mine as proved on the past about \$300,000 according to the need to make a profitable in very wind the past about \$300,000 according to the need to make a profitable in very worked down deep. The man are aliver and \$4.5 conces aliver and \$3.4 conces alive

There is so much in this Yankee Fork country.

There is so much in this Yankee Fork country to commend it that some day it must become a good mining district. Wood and waster are good mining district. Wood and waster stated and nonly isolation and long winters are the real obstacles to development. People trun off to more inaccessible camps because they are new and required richer than they are, while here the country is only slightly prostroid and good mines such as I have described are in the bands of men needing more are in the bands of men men described are in the bands of men men eating for capital to work them, or are waiting for capital to the them off their heads. This is a good country and should attract more attention. A Fine Mining Country.

and their wild eyes blaxing with anger, movered to the words of an agitated sees in the content of a forest, Bandered desperate by the contents of the fear, they pressed resolutely covered. Hand been killed; but they were now neglected by their companions, who evidently thought that human flesh and that of which companions, who evidently thought that human flesh and that of the words are to intentify the companions. However, the mole more desirable. For every one that they were sure of their triumph. By instinct, they comprehended it. The amel to book had intentify they were sure of their triumph. By instinct, they comprehended it. The areal of blood had where the danger was greatest. He had where the danger was greatest. He had intentify of the outsel, so rapidly did be more from the extensity of the correit to the other. Whenever these hydrophoirs days, they coung man flew to bis success, the seemed to have multiplied in their blood at his feet. Horrible lies thoughter; their blood at his teek. Horrible slaughter; their blood at his each morn dew to slaughter; their blood at his each word on the word and her to the or their blood at his each flew to be seen that and the word was an actor, as a ferman, but in several. Legions to the man had a several. Legions were attacking the palisade, Human skill and very and success the seasemblage of parts. A second was the action and were attacking the palisade. Human skill and very and the surgestime were attacking the palisade. Human skill and the start of the surface was an actor.

Hudger was Struggling with Frenzy

Against the terror which was struggling with Frenzy Against the terror which was struggling with Frenzy Against the terror which was repelling it with the pay feared, but a form of death so abnorrent, has a continual the standard of the dark, which the storm, the wolves they the first combat in the midst of the dark, collished the first of the dark, only a shad the first standard the storm. The first standard the storm, The first standard the storm, The first standard the storm of the countring in the storm of the storm. The first standard the storm of the store of the storm of the s

Canned Goods,

ueers. They are not parefully remembered by ueers, They are not put up in vessels from which they are to be eaten when convenient to be used myen when convenient to be eaten when convenient to consumers, but are only packed in this in order to preserve them. No canned goods are graenfeed to keep fresh and remain sound for a graenfeed to keep fresh and remain sound to pened. When opened the contents of the still and cake as soon as possible, as possible, if the food must be keep as all, cover the part of the original tim. The liquor round labeler, salmon and all vegetables, excepting throw and the contents of the original tim. The liquor round lobaters, salmon and all vegetables, excepting throw and the contents of the original tim. The liquor round lobaters, salmon and all vegetables, excepting throw and the contents of the original tim. Never on any proved by being turned out into a strain and certainty to though the salmon and the contents of that canned goods are cooked goods cannot be too widely known or carefully remembered by users. They are not put up in vessels from The Grocer's Chronicle insists that the fact

> BY PEDSO CASTERA, The Mines and Miners,

(Translated for the Pausa from Et Minero Mexicane by

(Continued from our last)

The Worly and the Sterre.

Only these enimals give an example of such proteoity. Ab 1 no. Man also devours his brother! "What do those doge say?" inquired say suything," replied Diego; "they do not last set they doing?" "They do not lesse." "Are they doing?" "They do not lesse." "Are they doing?" "They do not wolves." "Hie!" ordered the voice of they pare and wolves." "Hie!" ordered the voice of they be were drawing near. "Fire repidly!" This time the sessult was made. Their companions were mer practiced the they were drawing near. "Fire repidly!" This time the sessult was not all like the "your & loi gras," had only served as a stimulant to their appetites. They served as a stimulant to their appetites. They served as a stimulant to their appetites. They before they had like the "your & loi gras," had only treatment and like the "your & loi gras," had only seconds of the comparison the reaching them they met centain death, Hardly had they fallen frown may and deadly; but before the random and fine force howly they withdrew. Many word they were drawing the samples and deadly for they fallen fart with fart of the servent in the servent in the servent in the servent in the word of the force howle they withdrew. Many word the force howle they withdrew. Many word the force howle they withdrew. Many word the force howle they were being devoured, the besieged were resting. "It is impossible the servent of the period of the period of the period of the servent impossible.

To Penetrate this Cursed Slerra,"

Mattered Diego, in a low voice; "to-most impossible, "Mattered Diego, in a low voice; "to-mould will have a number ten times greater. It would will have a number ten times greater. It would will have a number ten times greater. It would wait have a number ten times greater. It would wait one of the guides, "there is one way in "Turn out two or three mules. "Yes, but that is cowardice." "There is one; the lead; go to they will post and fire. The man inclined his hear and the this." "Yes, Senor. The others, trembling, kepts in took his place. The others, trembling, kepts in learn to the companion of the man inclined his hear and the the time. The others, the man inclined his hear and the time of the said that they were calling their they were calling kepts in leg it was known that they were calling their they were cartain, because the phost companions for a new sessuit. The ranks of this they were cartain, because the phost companions for a new sessuit. The ranks of the summer and lurking ever becoming more numerous, and onlyes were cartain, because the phost of the Sierra, a prolific they were becoming more numerous, which exhausted the more numerous, and in the sea, the phosphoresone amounted after, a spattling circle surrounded the contract all the sea, the phosphoresone amounted and. In the sea, the phosphoresone announces and or the bear of a bround the thousand him to pieces and devoured by a thousand him to pieces and devoured by a thousand him of the mules in order to avert a new batt. For the mules in order to avert a new batt. In gent the mules in order to avert a new batt. Be will the mules in order to avert a new batt. Be will be mules in order to avert a new batt. Be will be mules in order to avert a new batt. Be will be mules in order to avert a new batt. Be will be mules in order to avert a new batt. Be will be mules in order to avert a new batt. Be will be mules in order to avert a new batt. Be will be a seasof and the prone. Diego

Saw no Means of Salvation.

The notes the contract of the water the contract of the contra

A BULLDER in Newburgh, N. Y., who is the devine A strings of own a building to make room for a new one, is putting the old brick and morter of the building to a novel use. He has constrived as grinding mashine into which he feeds the old brick and oncrear, and its ground into powder, or rather into building sand and coment, and the material will be used in setting brick in the new building. RAILWAY BUILDING.—The Kailway Age calls attention to the fact that a very large proportion to the fact that a very large proportion of the building this year has been done by four companies, which together are oredited far recorded. The Atohican, Topeka & Banta Fal, Minnespolis & Manitoba, 900 miles; the Bell Pall, Minnespolis & Manitoba, 900 miles; the Chicago, Rock Island & Pecific in Kansas and Chicago, Rock Island & Pacific in Kansas and Nebraska, 700 miles, and the Chicago, Burlington & Quincy in Kansas, Nebraska and Coloton & Good Minnespolis & Manitoba, 100 miles, 100 m

MINIMG PATERURE ISSUED. — United States arresport-General Hammond has received advices from S. M. Skockelager, Assistant Comvision of the Johnson of J

Victoria evidently recognizes the importance of gold mining, and in many ways encourages the development of their industry. From the report of mining registrars for the quarter ending June 30, 1887, which has just been received by the State Mining Bureau, it appears that the sawarded to the first person or company who has a warded to the first person or company who has been a state of March, 1887, establish in the colony of Victoria the host process and ores containing gold, and has the state stores and ores containing gold, allow, copper, galena, blend and all sulphides, which we have been successful in winning the premium, allow to compend the formation of a scholarship in minimar as the trustees of the fund may deem best toward the foundation of a scholarship in minimary and the foundation of a scholarship in minimary and the foundation of a scholarship in minimary and the foundation of a scholarship from the surface are also officed, in which, warious distances from known veing, in which, after alx months from known veing, in which, there shall be employed 200 men.

Minuxe Parears Issuer, United Steas after and Issuer an

Victoria evidently recognizes the importance of ENCOURAGEMENT OF MINING. -The colony of

MEW MODE OF WASHING.—The ill effects of sods will effects of sods on linean have given rise to a new method of sods on linean have given rise to a new method of in Germany and introduced into Belgium.

The operation consists in discolving two pounds as the head can bear, and adding to this one tables pound a solve the solve so the solve of soap in about three gallons of water as hold and solve on the solve of solve of the solve of the solve of the solve of the solve and the linean secrety hermestically as postining them as nearly hermestically as postining the olothes are afterward washed out the containing them as nearly as the solve and tuse of times and turpenties and that is a solve and solve and contoury of time, labor and luel. The inner searcely suffers as hil, as there is little necessity for rubbing, and its cleaniness and turpentine, sectoromy of time, labor and luel. The linential for turbing, and its cleaniness and turpentine, sectoroly of the summer as the sector while the former effect upon the linen, and while the former evaporates immediately, the smell the former evaporates immediately, the smell the drying of the olothes.

Euconomy of the cloan summediately, the smell of the drivers is said to disappear entirely during the drying of the clothes.

NEW MODE OF WASHING. -The ill effects of

Wednesday's operations the Galean smeltery. Wednesday's operations the Galean states the Wednesday's operations the Galean states the state shall be stated the state of the country of the casens for this course are including to the mass in season and reduce the ores of the mines in Bear works, as the figures the reduction company. Mr. Butte district, as the figures the reduction company. Mr. Selbie vouchaste, however, that in his opinion out such the works can be again to the next statements will be effected within the next ston. The trouble seems to have been the special power of Calean account to the trouble seems to have been the the first of the trouble seems to have been that the first the trouble seems to have been the true to the treat of iron or has as as yet been found in the district, the troub that the state of the countries at the present courts out and ball been out their district is enably obtained in the district the present courts and the companies having the recessity for the present court included to the accessity for the present courts and the companies having the conference of the companies having the conference of the companies having they come do he maller, to court them was otherged by the such have their over reduced for as small, it not be the district of the company.—Black Hills Pioneer.

GALENA SMELTERY.-With the close of

## Macadamsfins.

sel very quickly, when occasion requires. The engravings on this page show the application of It is a sort of " marine brake," stopping a ves-This novel invention has awakened consider-able interest on the Atlantic Coast, being in-tended as a means of prevention of collisions.

invention of John McAdams & Sons. Followthorough test of this patent marine brake, the Juo. W. Moore, chief engineer, U. S. W., B. C. Samson and M. A. Anderson, cadet engineers, U. S. W. They made a careful and Steam Engineering. The report was made by of Commodore Chandler of the Brooklyn Mavy-An official report was made at the instance

ing is the report referred to: The brake in question is attached to the

speed of from 10 to 12 miles per hour. a and etern, and 171 tons measurement; she has a steamer Florence, a side-wheel steamer, 127 ft. in length, 21 ft. 6 in. beam, 6 ft. 6 in. draught

a oylinder containing 23 apiral car-springs, 8 in. long by 6 in, diameter, placed end on end, each re-enforced by a smaller spiral apring in its tioned, is connected with a rod running through beams. These four chains are united in one, which, passing over the sheave above menwater, and immediately below the main-deck upward in a water-tight channelway, to and over a sheave placed above the level of the dead eyes inserted in the planking of the vessel, are attached chains which pass inboard through and at the points where they are re-enforced, and are carefully fitted to the stern of the ves-sel; at the forward end of each of these plates, their after ends to the stern post and planking, equidistant apart. Sheet plates are binged on The brake consists of two plates of iron, 8 ft. 6 in.  $\times$  8 ft, 6 in.  $\times$  5-16 in. re-inforced horizontally by four 5 inch wrought T-irons placed

leading to a windlass by means of which the connection with the spring rod, is another chain chains. Attached to the main chain before its The cylinder containing the springs is secured to the deck beams and hull of the vessel. These springs act as a cushion, and receive that portion of the pressure which is transmitted to the rion of the spressure which is the main pelons.

required. A binged pawl holds the plates in A spring is gived between the sainge A side of the vessel. brake is drawn in and secured closely to the

The operation of the brake is as follows: .esuod-toliq edt to ti mori gaisesq eriw a lo place when closed, and can be tripped by means vessel and the plates to start the latter when

to enter between the sides of the vessel and the forces it slightly outboard, permitting the water wire, the windlass relieves the chain, and the spring acting upon the inside of the brake, The pawl being tripped by means of the bell

to its outboard edges, and the force of the blow The presente of this water produced by the velocity of the vessel forces the brake open, when it is checked by the four chains attached

bne eat te spiral spiral springs at the end

of tripping, the vessel stopped in 22 seconds, and inside of her length. When the engine was When the engine was stopped at the moment speed of the vessel, and quickly stops her. of the chain. The strong pressure of the water forward of and acting upon the 110 square feet of immersed brake immediately checks the

and her motion so slow that, no serious damage could have been effected had the boat collided aprung with the engine still going shead as rapidly as possible, the speed of the vessel through the water was immediately arrested, moment, the vessel was stopped and moved in the opposite direction in 12 seconds, and in a space of about 35 feet. When the brake was backed and the brake aprung at the same

the former case was greatly retarded by the seconds, and the complete circle in 3 minutes and 27 seconds. The velocity of the vessel in -90 degrees change of ourse obtained in 42 as, without the brake, and with the rudder alone, the circle was about 250 yards diameter plete circle in 3 minutes and 47 seconds; wherethe rudder, the vessel was turned in a circle of about 150 yards diameter, and changed her course 90 degrees in 50 seconds, making a com-Operating one wing of the brake as an aid to with another,

As a means of preventing accidents when a

month crushed 1402 fons per day, at a cost of guartz 23 9-10 cents per ton. This is a record of guartz crushing which is hard to best. bined mills in working the 3443 tons of ore last and of milling 23 cents per ton. Huntington mills are used, there being one four-foot and three five-foot mills. These com-

necessary dynamos can be constructed.—LyonCalifornia Pan-Mill adopts Rie's electric system, and it will be put in as soon as the WE underetand in Virginia City that the the corrior starts algorial adopts Res's electric

per ton, or about 48 per cent of the total. The profit that mouth on a yield of \$3268.49 was \$1572.91. The cost of mining was 374 cents,

yielded \$1.16 per ton. The profit was 56 cents

September 2796 tons of ore were worked which

made on such low-grade ore is remarkable. In

ing yet. The fact that any profit at all can be

This is the very lowest record of quartz work-

profit of 32 6-10 cents per ton resulted. The percentage of profit was 35 8-10 of the total.

It will be seen from this that the ore only

Profit.....\$1123.61 
 201-6 22
 201-8 01
 201.8 81
 mot ray agood

 33 88188
 beoutloop
 bothoot graph
 follos

 40 2103
 most agood
 bothoot graph
 follos

33 888\$ 88 888\$ 23 001\$.....sLatoT

Run: 242 days reduced 3443 tons of ore.

Mill.

\$2 74018.

Run: 28 days' work produced 3443 tons

sa si dranate and for last month is as the mine, so that the statement may be relied

ment pro rata of the preferred claims against

lease, all proceeds must be applied to the paya dollar a ton. According to the terms of the

and a profit was made on rook worth less than

nundred tone more rock were mined and milled,

that of September, recently quoted, for several

nedt gaisirqua even meve si redotoO rol broser

ing done on a large scale. The mine is under lease to F. W. Bradley, and a sworn statement is made each month of the yield and cost. The

cheap quartz mining and milling, the work be-

vada county, in this State, for the month of September, which showed some remarkably

the Spanish mine, Washington township, Ne-

In a recent number of the Mining and Scientific Press (Oct. 22d), we gave the record of

A Profit on 91-Cent Rock.

Low-Grade Gold Ore.

quicksilver forming to some extent an exception to this rule. As the presence of more people is indispensable to the full measure of

growth in population, gold, silver, borax and

ruo sitswa tanoosa lasitsay talita waita In short, the turning of these forms of our ma-

exploitation, mining for manganese, antimony, zinc, chromium, etc., being also much extended.

So too, under such more favorable conditions, would our deposits of coal justify more thorough

profit, though they will not bear exportation.

domestic requirements could be produced with

ter more common metals and minerals, sure an early and large development of these, Oalifornia's greatness, so is this necessary to in-

8744 24 1191 49

Cost of reduction. Labor. | Mil sceness | \$227-32 | Water for power. | 154-50 | Handling ore. | 78-40 | General expense. | 78-40 |

30 t per ton. .....80 4.10 c.

Cost of production. Extracting ore to mill. Deadwork

,ero ic

yielded a trifle over 91 cents per ton, yet

ABOUT \$13,000 in coaree placer gold arrived

Among it were many beautiful and valuable at the United States Assay Office last week from the Cœur d'Alene country, in Idaho.

was under the immediate supervision of Prof. Emmons, who now goes to Washington. Denver, Colorado, has been closed. The office THE office of the U. S. Geological Survey at

draulic. They are bailding flumes and will be ready for work in May. AT Foster Creek ferry, on the Columbia river, a California company is preparing to by

the para working and 80 stamps dropping, of iron, asphaltun, mica, graphite, asThe power for these mills is supplied by Pelton mater-wheels in the C. C. shaft, a wire rope ing used for transmitting it. The system is worked, these being articles that under large months and comment, will all be extensively being used for transmitting it. The system is worked, these being articles that under large materials are all the system of the system is a system of the sy

and Minerals. Utilizing Our More Common Metals

gold and silver mines. We are all in the dark, too, as to the economic value of her useful metwhich her agricultural resources will, through the practice of irrigation, the use of fertilizers and the employment of improved methods of forecast the growth of her manufactures nor yet tell what is to be the future output of her was the state of the provinces and yet tell what is to be the future output of her yet tell and all and all the straintes. cannot tell, for example, the extent to they come to be fully known and unfolded. know, nor can we well guess, because we do not know what will be her capabilities when will ultimately be able to support we do not has capacity to comfortably subsist a greater number of people than any of her sister States is probable. How many inhabitants California most the leading State of the Union. That she sential element of greatness, population. That measurably supplied and she would standal. sources are concerned. But she lacks that es manding position, her territory and her rethan real. She is imperial in so far as her com-But as yet her supremacy is prospective more sins, she is justly entitled to such distinction. California has been designated the Empire State of the Pacific Slope, and, as compared with the other States west of the Eocky mount-

more than likely we would have been importers instead of exporters of these articles. Certain where as are salt, coal, copper, iron, etc., it is Were quicksilver and borax as common elsereason that while their consumption is large, they are found native in few other countries. cles that will bear exportation; and this for the quicksilver and borax, because these are artibeen able to produce here large quantities of to the home market for absorption. We have modifies that must, for the greater part, look found to depend more than any of our other natural products on the extent to which the State becomes populated, since these are com-The value of these latter will, no doubt, be als and minerals, and the part they may yet play in the industrial distory of the State.

it is we would have made of them only enough Factor: Physes of Modern Western Furnace Produce, S21. Weesdamafins—A barnine Brake of the Produce, 100 of Olisions, S2.

EDITOHIALS.—A Wew Hydraulic Concentration: The Modern Western Minney, Blass Fornace, S2.

Scoond Growth of Minning, Blass Fornace, S2.

EDITOHIALS.—A Wew Hydraulic Connentration of December 100 of Minning, Blass Fornace, S2.

Sound Growth of Minning, Blass Fornace Minese, S3.

MEGNALIATION OF WESTERS—The Mines and Miners, S2.

Solder for Falcierabh Wires, A Dangerous Hydron, S2.

Solder for Palcierabh Wires, A Dangerous Fronces—Solder for Pelifornia, S38. The Mine Destructive to Same of Minese, May Minese, March Country, S38.

MEGNALIATION PROGRESS—The Minese and Miners, New Solder for Pelifornia, S48.

The Places, Juderic Marker, S4.

MEGNALIATION WIRES, A Dangerous Hydrockive to Same of Minese, May Barkery, Parenacion P. Barthumes, New Wires Under Pulling Stress, Hotelion Cast.

WHEN HAMPORIA MARKERY, Prevention of Boiler Soles, Parch Incent Journal Bearings, Reventing Case; Clean Case, Parch Incent Lournal Bearings, Reventing Case; Clean Case, Parch Incent Lournal Bearings, Revention of Boiler Soles, Parch Incent Lournal Bearings, Reventing Case; Serial Revention of Boiler Soles, Parch Incent Lournal Bearings, Revention of Boiler Soles, Parch Incent Lournal Bearings, Case; Case of Budding Bearing Case; Parch Incention of Boiler Soles, Parch Incentive Case, Parch Incentical Revention of Boiler Soles, Parch Incentical Revention of Boiler Soles, Parch Incentical Revention of Boiler Soles (Parch Incentical Revention Parch Incentical Revention Revention of Boiler Soles (Parch Incentical Reventio

Though California is exceedingly rich in most

wholly or in part, our supplies of iron and sheet copper, earthenware, fire-bricks, car-bonate of sods and the various preparations of consumption. We have obtained from abroad, of the useful metals and minerals, yet she has not produced enough of some of these for home ment Journal Destroys, and ment Journal Journal and Mines, S42.

Mines, S42.

BAUGINEBERIMG MOTES.—Impending Change in EMCHINEBERIMG MOTES,—Impending Change Steed-Car Fropulsion; Life-Saving Courbono, Losing Elser, Underground Cable, A. W.—WORMATION.—World Descriptions of Stropping Machine; Destroy of Ropes; The Chinese Coming Stropping Machine; Petroleum Under Molesti, A kacon Stropping Machine; Petroleum Under Molesti, Inflambal Machines, Petroleum Under Molesti, Inflambal Machines, Machines, Petroleum Under Molesti, Inflambal Machines, Machines, Petroleum Under Might's 1848.

in other words, we produce in California nearly as much coal oil as we consume. equal to the entire importation of that article; Some of these imports, after being sold by our merohants, are exported to other countries, the quantity of coal oil so disposed of being mearly the sulphur, fire-bricks, etc., that have arrived meantime having been brought here as ballast. bonate of soda, the most of the salt and some of lime, borax, the caustic seids or the crude carfor many years past have been, produced in the State. Not of late years have we imported any of things were imported that are now, and being, with one or two exceptions, much less now than formerly. In early times a number nia, the importation of the above commodities larged the number of articles made in Califoras labor and capital have become cheaper, and home consumption has increased, we have en. abroad than to produce at home. Gradually, made it cheaper for us to obtain our supplies them to meet domestic requirements has been due to the high prices of capital and labor on this coast, and the limited home demand, which terials that enter into their composition in the greatest abundance. That we have not here-tofore manufactured or gathered enough of and yet we have these articles or the crude maand other building stone, salt, glass, mica, as-bestes and various other mineral substances, which it forms the staple; petroleum, marble

larging the home market for our various mineral and metallic products, so will the business of utilizing these products be extended; and thus a commercial value be given to many of those now practically worthless. country to draw upon, ore should be abundant.

The pan and stamp-mills of the Con. Caliholds out. With such a vast area of mining ning day and night as long as the ore supply is a large amount of ore on hand already and more coming. The smelter will be kept run-As the population of the State increases, en-

> SCIENTIFIC PRESS DINING

Ofice, S20 Market St., IV. B. cor. Front St., S. F.

Terms of Subscription.
Annual Subscriptions, \$5. And subscriptions will be declined without cash in advance. All arrearages must be paid for at the rate of \$3.50 per annum.

M. B. EWER.....SENIOR EDITOR.

egon, were started up on the 15th inst.

The new reduction works at Portland, Or-

unless rare specimens are selected for assay. The mines are in the vicinity of Prescott.

per ton rock in sight. Nevertheless they may have a very rich mine. Gold ore that runs into the thousands is very scarce indeed,

ated, since they talk of many tons of \$75,000

concerning the quartz are doubtless exagger-

gold region in Arizona is at hand. The atories

other State or country can show any auch record we will acknowledge that Oalifornia is

mine in this State which is making a profit on rock which mills only 91 cents a ton. If any

" national bird" and thoroughly enjoyed them

by feasting and family gatherings. We trust fate that the trust land in the trust of the trust in the trust i

Thankagiving Day is one of our National as well as State holidays, and is duly celebrated

Passing Events.

Business Announcements,

Stroping Accounts, Perforem Johese, Misses, Stroping Accounts, 1948.

Stroping Accounts, 1948.

Districtly Heart Theorement of Bright's Disease;

Districtly Heir, Scienties, Healthuness of Oyabers, 3848.

MINING STOOK MARKET.—Stakes of Meetings, Assessor of Children, Novada, Artzons, Colorado, Idabo, Morr.

Francisco Stock Board, Notices of Meetings, Assessorements, Dividends, and Bullion Shipments, 348.

ILUSTRATIONS,—Robinson's Hydraulic Concer-trator; Types of Modern Western Furnace Practice, SSL. Macademefine—A Marine Brake for the Preven-

TABLE OF CONTENTS.

Saturday Morning, Nov. 26, 1887.

SCIENTIFIC PRESS PATENT AGENCY.

Entered at S. F. Post Office as second-class mail matter

Our latest forms go to press on Thursday evening.

Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Гоирои Аскит—Агркер Е. Аин, 63 and 64 Исw Broad Street, E. C.

Per Line (agake)...... 3 mos. 12 mos. 10 mos. 10 mos. 10 mos. 10 mos. 10 mos. 20 mos.

Advertising Rates.

AN FRANCISCO:

DEWEY & CO., Patent Solicitors.

Analytical and Consulting Chemist—W. T. Wenzell. Mining Property—Israel W. Knox.

In another column we give a record of a gold

beaten in working quartz, but not until then.

Confirmation of the discovery of a very rich

DEWEY & CO., Publishers.

one so rai ILA, appear the first one of the formula so rail of the first of the fir are released the springs, d, open the fine suffi-blod a nieg or ter the water to gain a hold

The Scientific American in speaking of this sels while in action, the brake would never be used, as it would retard rather than increase the facility with which the ships could be

appropriate the composition of the parties of the parties of the steam of the opportunity of witnessing ing the fine spread out. Fig. 4 is a longitudical with the steam of the opportunity of witnessing ing the fine spread out. Fig. 4 is a longitudical witnessing ing the fine spread out. with a cetton, the brake would never be would never be worked with a selecant success.

I LETORENCE AR PRINCE the fine on the steamer Florence the device prewhich pass the rods that form part of the soldes and chains. The plate, it, connects the sides and serves to resist the cutward pull of the obsiderable and shortly after Mr. McAdams had perfected the filterence that are not been sent and serves the standard of the stand

"MACADAMSFINS"-A MARINE BRAKE FOR THE PREVENTION OF COLLISIONS.

plied to bay and river steamers, and large cocean steamers as well. The suddenness with which and another vessel. Many very capable seamen at first thought this invention was of little value, but have changed their mind amos witnessing its operation. It is intended to be applied to have distributed to have and large nessents.

distance of about 20 feet; or in other words, in case distance than she travels in one stops in less distance than she travels in one stops in less distance than she travels in one that a late that eye-holes and connected with chains extending to the windlass, &&, which are looked by pawl, &, which may be released either from the pilotthe side of the vessel through which the chains pass. To the free edge of the fins, cc, are attached chains which are led through proper

lever and stop his ship to prevent going sshore or to avoid being rammed; nor would he refrain from steering with them by opening them slightly alternately as needed, if his rudder bethey have not foreseen the other advantages in a naval action. Meither of these examiners, we fanoy, would hesitate, in an action, to puil the seconds after the trigger is pulled, and within a The crushing power or principal momentum of the boat seems to be overcome in about ten be used by navel vessels in action. This, we think, must have occurred because the turning qualities were not properly shown to them, and make on this report is in respect to the conclusion. Gur observations fully confirm, and, sions of these officers that the fins would never be used by mayal vessels in action. This, we also than those set forth in the above report. report says: "The only comment we have to several trials of the invention on board the nal section, and Fig. 3 shows the eye-holes in vented a serious accident between that steamer

## II)ECHANIGAL PROGRESS.

may be produced.

WEW BATTERY.—A new type of secondary bettery was employed on the electric launch recently tested by the French naval authorities at Havre. The inventor is a M. Desmanues, and the oell is constructed as follows: A cylinvessel and a portion of the negative electrode trace in a series of the plate forms at once the containing which is a sheet of the same material. The ous copper, obtained by subjecting the metal in a state of powder to a pressure amounting to material. The cut copper, obtained by subjecting the metal in a state of the search CLEAN CASTINGS.—According to Industries a Dusseldorf, Germany, firm have recently included in the foot of the control of the moltan of the control of the co has been recently granted to Mr. Walliam H. Drown of Jeresy City for a novel brown of Jeresy City for a novel brown of Jeresy City for a novel brown of Jeresy City for a novel process of process on made of steel, and the plates in question are made of steel, and the process continuous length and of required width by process continuous length and of required width by fire any continuous length and of required width by fire any continuous length and afterward rolling seed the metal is proper thickness and perfectly amooth surface is obtained. Mext, the surface is obtained. Mext, the surface is obtained. Mext, the surface is obtained in most and plate ward sure, between highly polished rolling the seed through a bath of moleon the surface is obtained by the such between highly polished rolling, by which the steel are condensed and onsolidated between highly polished rolling that be the bardened upon and incorporate of the found to be so hardened upon and incorporate wherever produced, and which the the the such a heavy trolling to most respects to any tin plate wherever produced, and which is superior in most respects to any tin factor is upperior in most respects to any tin plate wherever produced, and which is sure the produced, and which is subject the income plate of the iron would because the florous structure of the iron would be applied is the same as the leave the iron world tit to be applied is the same as the to recent the iron would be a sea of the same shall the iron with the iron of the structure of the iron of the iron of the same structure of the iron of the iron with the iron of the same structure of seel the iron of the feet drainage of the condensed steam is secured, and treezing is impossible. Another advantage as and treezing is impossible, and treezing of a waiting at a under each car, in which sufficient steam can be generated to heat the car while waiting at a way-station to be attached to an expected train. In case of accident to a train the pipes would instantly become disconnected.

tinware, etc.—Scientify American.

The King's College Engineering Society, Mr. A., A., B. tocele the Society Mr. A. A. to recent meeting address, the subject chosen for it being that of electric may be included the principal address, the subject chosen for it being that of electric meeters, in which a description of the principal meeters, in which a description of the principal meeters may be divided into two classes. The Forber and Perranti meters are good examples of the necter is among the best of the chemical class, as they are able to register and Perranti meeters are good examples of the alternate and continuous currents. Edison's alternate and continuous currents. Edison's and depends upon Faraday's law of electrolysis. Ferranti's meeter is based upon Ampere's laws and courtents, proving the rotation of selectrolysis. Forward the circumference as well as round the circumference of a circle. The Forbea meeter is which the main current hows. It grees good oursents, proving the ordsting the rotation of securities of anceses. Power meters meetr is which the main current hows. It grees good promises of anceses. Power meters meetr is entremed by the heat in an iron spiral, through ordinary train of clock-wheels with a pendulum, which the main current hows. It grees good ordinary train of clock-wheels with a pendulum, whose boe consiste of a corl or given of Siemens & Halske's, Ayrton & Berry's and Aron's meters. The latter consists of an ordinary train of clock-wheels with a pendulum, whose boe consiste of one gives the measure of the ourrent. Aron's antomatic catech, was also ping and starting the clock-wheels whe measure of the current. Aron's antomatic catech, was also ping and starting the clock-wheels when heasure of the current. Aron's antomatic catech, was also ping and starting the clock-wheels with a good electric measure of an electron one gives the measure of the answer of the course and one gives the measure of a condition of seconds. The accessify of a good electric measure of an electron of secon

EXPANSION BY HEAT OF WIRES UNDER PULL. ING STEESS — Mr. J. T. Bottomiey contributed a valuable paper upon this subject to the physical section of the British Association at the sical section of the British Association at the late Manchester meeting. The wires were two fine copper wires. One of them carried about a rapended in a tube, a scale being strached to one and a pointer moving over the scale to the wires were tenth of its breaking weight, and the other about a copier work of the wire swere the an a pointer moving over the scale to the the tube, the the tube at various points, and the wires were the conditions of the wire serving the wire found that the more than the lightly-weighted wire the chad much more than the lightly-weighted wire conditions. As amount of permanent clongthing weighted wire the near the instributed wire. Each time the heating was done floregation retained the contract leaves more of the writes was nor breaking was done from a late of the more than the beating we far in the heating was than its black wire were made with wires was hand that the beating was then its than the lease of copper experiments were made with wires which had been hardened, and the final result is that the open conditions of expansibility for heat of copper wire strained by a certain weight is greater than wire strained by a certain weight is greater than that of each of expansibility for heat of copper wire strained by a certain weight is greater than that of each of expansibility for heat of copper wire at a wire strained by a certain weight is greater than that of each of each of each of expansibility is a strained by a certain weight is greater than wire strained by a certain weight is greater than which will be the strain which weight is greater than which weight is greater than that a strained by a certain weight is greater than which will be the strain will be weight in the strain and the will be weight in the weight in the will be weight and the weight in the will be weight and weight in the weight in th

the state of the restriction of the steer in a specific of a superior of the steer in the specific of a specific of the steer in the st

A Plant Destructive to Sweet Taste. the stomach is divided radiately by fleshy partitions or septz into native youngestmeness, thions or septz into native connect the stomach to the stomach to the stomach to the stomach for in place, serve to pull it open or distend it for the reception of food.

"The compartment between the two septs of each pair opens at the top into the interior of a tentzale, and thus the cavity in each tents of a tentzale, and thus the cavity in each tents of a tentzale, and thus the compartment is properly, as first recognized by Prof. Verrill, the erly, as first recognized by Prof. Verrill, the muchous of since each corresponds in position and function to an ambulacral or tentzale. But section in the Echinoderms and other radioning sections." (To be Continued.)

A Plant Destructive. A wish with the Wish. Med. Bist. says that lately a drug which wish. Med. Bist. says that lately a drug which possesses the property of rendering, our sense of tasts unacceptible to sweet and bitter state of tasts unacceptible to sweet and bitter has some of tasts unacceptible to sweet and bitter has a coroside, as it is hoped that by its aid our as sense of tasts are he had been as the manager of the property of the byte of the tast it may be extended, and that it may be extended, and that it may be extended the material medica. The drug is obtained from Gymnem and the cosat of Coromanda becam, Assam, and the cosat of Coromanda becam, Assam, and the cosat of Coromanda becam, Assam, but his lates and the cosat of Coromanda becam, Assam, but his lates and the corosion of the corosion TWO NEW VEGETABLE PERFUMES are said to

Two Mew Vecerater Perrumes are said to have lately become articles of commerce. One of these is a kind of xylopia from the province of Chirigui, in Costs. Rices. The odor closely resembles that of Canaga advanta, and the flow the meantiscture of ylang-ylang. The other lately and of sther plant, in the meantiscture of ylang-ylang. The other plant, in amed owco, and is the highly odoriferous blosmom of a kind of sacais tree which is found in the standard was the Central Africa, and which Serpa Pinta was the Gentral Africa, and which Serpa Pinta was the down the Cubangin river for saie. They cover the trees on which they grow with such profusion that they flow they grow with such over the trees on which they grow with such over the trees on which they grow with such over the trees on which they grow with the

New Solder for Telegraph Wires.—A new and rapid method of soldering these wires now and rapid method of soldering these wires has recently been introduced and is now to be be already and replained to the saving of time required vantage consists in the saving of time required for the work and in the avoidance of any for the work and in the avoidance of any duce the strength of the wire. The two ends of the wire already embraced by binding of the wire already embraced by binding to one standard the strength of the wire and of the wire and of the strength of the wire selected by or which there is sufficient powdered saltoned, however third salt. The ends of the wire pressed into this quickly joined, however dirty they may be are quickly joined, however dirty they may be.

A DAMGEROUS INVENTOR.—A Russian lieutenand I DAMGEROUS INVENTOR.—A Bussian lieutenant to engineers has perfected an apparatus for infercepting telegraph and telephone messages in time of war. The apparatus is contained in a small oblong box and weighs rather less in fast three pounds. The telegraphic receiver is of the recording type, and a battery for returning the recording type, and a battery for returning the messages to the enemy forms part of the quipment. An invention of the nature above described cannot fail to be dangerous in the hands of unserrupulous persons.

## Scientific Progress.

Paychic. The Three Forces—Physical, Vital and

NUMBER IS.]

In the Azalma and other Bessel.

In the Azalma and other diplomiferze, though true societies, most of the individuals cannot separate themselves without the danger of seath, and usually they so co-ordinate their movements that the colony may perform certain acts; for instance, the caramen (Physales) of the Fortuguess men-of-war frequently change their course, and then all the individuals of the colony concur in the act. We have here a unit trom the Psychic points of view; they have a unit which controls them—a will which decides for them by what Perrier calls a kind of social conwince the controls them—a will which decides for the second controls them—a will which decides for the second controls them—a will which decides for the second controls them.

The Hydras and Medures, living free, are sufficient to represent the second considered as a sufficient to represent the considered as they are sufficient to represent the second considered as a sufficient to represent the second considered as a sufficient to represent the second considered as a strength and the second constant and

## .famina elanis a sa

A true individual of a pingeneral property of ping

and per cubic meter—Xof ganons are used.

PARCHMENT JOURNAL BEARINGS.—Experiments are being made on Funesian realiways with axie-boxes fitted with bearings of vegetable parchment in place of brass. The parchment is strongly compressed before beings, theing used, and it is thoroughly dried to prevent used, and it is thoroughly dried to prevent the collars of the journal. An emulsion of pleed on the outside of the parchment served been used as lubricants. The parchment some becomes impregnated with oil, and will run a been used as lubricants, The parchment some long time without a renewal of Inbrication. The parchment segments are placed perpendicular to the journal. The claim is made that these compressed paper bearings made that made in use in segments are placed perpendicular to the journal. The claim is made that material that is superior to make a tough material that is superior to make a tough material that is superior to make a tough satisfactory operation.

PREVENTION OF BOILER SCALE.—The Chrondral diduct Industrials contains a communication upon the light Industrials contains a communication upon the light Industrials contains a communication upon the light Industrials contained and in the actions transing in making experiments which various transing in order to ascertain which is the most effective for the required purpose. He states that forwards humanogenium, a species of dock that grows plentially in sandy soils in a large territory on both sides of the troots are produced not be made over a large portion of Western Texas. The bulbous roots are produced in clusters weighing several pounds. They contain 25 per cent of tennin, order to entry of tennin, along with gum, starch and ligneous matter. A liquid extract is made from the cent of tennin, along with active the made from the port in order to remove the liquid extract is made from the several liquid and resin, and a brown injents but in order to remove the marking 20 degrees B. Of this five grammes—75 grains—per hydrotimetric degree of water and per cubic meter—264 gallons are of water and per cubic meter—264 gallons are of water.

# NOVEL USES OF PAPER.—There are lew things that cannot now be made of paper. Its adaptives and the state of th

pulsion. Impending Change in Street-Car Pro-

Engineering Notes,

In his recent remarks before the American Interpretation of Electrical Engineers, Mr. Anthony Experience of Electrical Engineers, Mr. Anthony Experience of Electrical Engineers, Mr. Anthony Experience of the expension said:

Very great their in store for us, and the iting the expension as street care and the time of the expension of the said the interpretation of the expension as a street care with the electric motors. The expension is the street of the expension of the expension of the expension of the expension of the electric match is easing the expension of the expension of the electric manufacturing and early place at the electric manufacturing and early place in the electric electric motors. The expension of the electric elec

Swext Portao Flour.—A patent has been taleating week to the catce of treating sweet potents around a process of treating sweet potents at the control of the inverse of process of treating sweet for the inverse of process of treating a process of treating the control of the inverse of the control of the co

pered, so that the same amber of care will the starty double the number of passengers in the same time, army double the number of passengers in the same time.

The age of steel also believes in electricity as the best of steel care, and the care, and the care, and the states is required for the estates as the character of importance and cost with the formal care is with the latter. 2. The suntil the formal reservity of say one-fifth of the live-took end of the song of the cost of the population of the states. 3. The cost of causes. 6. The efficiency of the cost of causes is enforced by any once of a number of calculations of the cost of the cost of the cost of the cost of causes. 6. The efficiency of the forse in extremely hot and cool of weather its at its lowest, though its should be at its linguest, which is another and final point in favor of electricity, if we leave speed out.

A Norwegian engineer, Herr W. C. Moller, of Jeanwar, Norwegian engineer, Herr W. C. Moller, of draw 10 Jeanwar, Norwegian engineer, Herr W. C. Moller, of draw 10 Jeanwar, Norwegian engineer, Herr W. C. Moller, of draw 10 the extreme buoyancy of reindeer particles of this material for interacting various articles of this material for interacting various were recently made. The first was one which can be used on board tried was one which can be used on board tried was one which and the second in the second of need, may be converted into a small boat. This apparatus was found capable of supporting three full-grown men in the except the late, and overlag the supporting the entire body of reindeer hair, and overlag the entire body of reindeer hair, and overlag to past two. Another object tried was a succeeding the entire body of teindeer hair, and supported the entire body of teindeer hair, and supported the entire body of the was a door-mat made of reindeer hair, and this was supported a man essily, although he was maported a man essily, although he was not much lighter than the later while in the dressed in thill out-droor elothing. On comparing were much lighter than the later while in the dressed in thill out-droor elothing. On comparing the later made of reindeer hair with similar in the dressed in thill out-droor elothing. On comparing the later made of condear hair with a supporting a weight ten hair is eapable of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten sperion where much lights of supporting a weight ten

UNDERGROUND CARLES,—Detroit has three underground cables, each 1900 feet in length, for the use of the fire department. They are asserted work perfectly. This experiment seems to prove that there is no serious difficulty in placing electric wires and estimate.

USEFUL INFORMATION,

Orontehone Losing Electrity.—Very elastic esoutchoue tabing gradually loses some of its elasticity. Later, the tubes break on its elasticity. Later, the tubes break on stretching, even if previously laid in warm water, and finally they crack if pressed between the flow formation of sulphuric soid by the action of moist air or the sulphur contained in the caoutchouc. By frequent washing with slightly alkaline water, the sction of the soid is prevented. Tubes washed five or six times a year vented. Tubes washed five or six times a year meaning of perfectly elastic.

rope-making had been acquired, so that it must be cleased among the oldest of the arts. The carking the anoing the process of must showing the process of manufacture practiced more than 4000 years ago, while the oldest records of the process of t

directly if the water is warm, and indirectly in a rescitonary way if it is oold, wates it up to it is oold, wates it up periatals of the slimentary tract, wates it up periatals of the slimentary tract, wates it up and water when the circulation, either local or old water when the circulation, either local or old water when the circulation, either local or old or young, age, nor in the feeble as to coal troubles, like nor thouse it is esten in local troubles, like obtained to great in local troubles, like of the coal or old or young, of salt is very beneficial. Such a time-honored coals of the coal could only have been so persistently advected to because of it laving been found by bered to be the most appropriate time, or persistently advected to because of it laving been found by bered to be the most appropriate time, or persistently and the coals of the sactory what warm or bot water, with the eadlition of a labt, does, and more, in that it is the coal of or and a salt does, and more, in that it is not the addition of a salt, does, and more, in that it is not not and savites and according to a neutritive and excites the slow of gastric juice." The Chinese Coning with Bereaters.

Even the conservative Chinese appear to be appear to date, The regular Chinese troops are being armed with a repeats. In principle it is very similar to the Lee, the boils action and magaratheatheath below the breech being unmistrates attachment below the breech being unmistrated attachment below the troop articles is small, and the rifle is sighted to 600 yards.

Grass is a bad conductor of heat, yet the plates used are so thin as to oppose but a very slight barrier to its escape; on the other hand, it is an excellent absorber and radiator—so that, in fact, it permits the escape of heat almost as readily as plates of iron of equal thickness. The loss of heat in winter by single windows is enormous.

DELTA METAL STONAL ROPES —Signal ropes for mines in Europe are made of delta metal, for the reason that this metal strongly resiste corrosion from sulphur-impregnated weter of the injures. The metal of which the ropes are made is said to have a tensile strength of more than 50 tons per square inch of section.

PRIVIED matter may be copied on any paper of an absorbent nature by dampening the surface with a wet solution of society of press. Old pressing it in an ordinary copying press. Old writing may also be copied on uneased paper, if wet with solution of sulphate of iron mixed with a simple solution of sulphate of iron mixed with a simple solution of sulphate surface.

A RAZOR STROPPING MACHINE.—We must give honor to whom honor is due, and it is apparent that the inventive Yankee has been outcase to the fine inventive Yankee has invented a dane tor one. An Englishman has invented a tracor-stropping machine. You put your dull resor into a rest prepared for it, turn a crank, and the thing is done.

PETROLEUM UNDER BOILERS.—Bassis takes the lead in utilizing petroleum for steam boilers. It is reported that thore are in use in that country as many as 50 different types of appa-ratus to burn petroleum under boilers.

A very large number of adults form the babt of eleopurg in one particular position, and babt of eleopurg in one particular position, such as lebep upon the back. "Some obedens sleep upon the back." Some obedens it is flaced upon the back. "Some open the sleep with the back of eleopurg in one particular position, such others can only aleay the head greatly ackended; more offere one it is flaced considerably upon the truck. Watership of the based very low. Some observations made by Dr. G. Mosovitch of the control of the based very low. Some observations made by Dr. G. Mosovitch of the based very low. It has yet to be determined whether any particular harm can come from sleeping in a certifical that the liver, being a heavy organ, tends to press upon the other bediens and whether a conscious. It has yet to be determined whether a conscious the left ale. At any particular harm can come from sleeping in a certificate abow. The autorities. He found, for the extension of the bronchitis. He found, for in question bedien and its on the left ale. At any rate, the extension of the bronchitis. He found, for inquestion and its on the left ale. At any rate, the extension of the bronchitis. He found, for it is a sleeping has an induce upon the bedien of the bronchitis of the greater ingress of oold a british of the morbide sace and the fact during sleep, and the found, the control of the presses of the ordon. Tepose on the left and of the confer hand, tavors the greater ingress of oold on the ordon. He possege of the ordon, the transfer more periods and truth to the confer hand, the control of the passege of the ordon, the transfer ingress of only on the ordon. Tepose on the left and truth countral sleeping has an indicate on the passege of the ordon, the transfer ingress of only on the ordon, the possege of the ordon, the transfer of the greece of the passege of the morbidity of the ordon. He possege of the ordon, the passege of the ordon, the transfer more particular to the ordon, the passege of the ordon, the ordon and the IVELAMMARILITY,—Dr. Doremus says that the lightest tissues can be rendered inflammable by dippling them in a solution of phosphate of amonia in water. It will be found impossible to set on fire the fabric so treated.

GOOD MEALTH,

Treatment of Bright's Disease.

SIEVES.—Anthenticated records show that the extrices sieves were made of rushes and papyrus. These were needed by sieves made of lorse hair and silk, which, for certain purposes, remain in use to the present day. Write seems to have been first made by silving sheets seems to have been first made by sheets berg, Bavaria, in 1351. Its ready adaptability to the weaving process, probably shortly afterward led to its introduction as an open abrite for sieving or screening. Its saidy adaptability to the weaving process, probably shortly after for sieving or screening. Its aready adaptability to she great improvements made in the shortly after manufacture of wire cloth by the employment of special devices and skilled labor have brought in fact fully three-fourths of the employment in fact fully three-fourths of the manufacturing industries, while it are the fully three-fourths of the employment in the condition of special devices and skilled labor have brought in the thing three-fourths of the endoarties, while for articles of their processes, while for articles of utility and comfort in the clement of a stranger of their processes, while the stranger of the country in the bouse-fourth of the stranger of the shall of the country of the bond of the country in the bouse-fourth of the shall of the country in the bouse-fourth of the country of the co

Semmola of Bright's Disessee, was come in order of the masses advises strongly against a loomer of the must be stongly against the country of the must be seed to come in contact with cold in any avoidable to cond, and coid baths are followed by great abook and depression. Violent massesse and depression, Violent massesse and depression and depressio

A WONDERFUL LANDSGAPE IN INSECTS.—At the Parisian Palais d'Industrie is a landscape the Parisian Palais d'Industrie is a landscape.

Coreground is composed of 45,000 coleopters, the remainder of the picture being formed of over temainder of the picture being formed of over temainder of the picture being formed on the supply every tone requisite for the landscape. The completion of the work occupied the artist four years.

AMERICAN FOR THE HEAD AND THE H

Sciarroa.—Oures of scietics are reported as having taken place in Paris after a single application of OF. Bovov's method of treating the oblivide of painful parts with a spray of coloride of methyl. The operation is said to be applicable also to facial meuralgis. Superstructs and the campaints of anger-duction that she is in a possible both by means of depilatories and by sleeticity. The former are uncestly preparations of supplies of barium or subhide of ealchim, and the process by electricity is very slow, each hair root hav-ing to be killed separately.

LEAD MECHANICALLY MIXED WITH WATER.

It has been proven beyond all doubt that waters which circulate or stand in leaden pipes or vessels not only take up particles of lead through mechanical sotion due to friction, but the result being generally lead ostbonste. Minute quantities of lead into, and secunmilating in, the system must rank among the causes of anama and defective nutrition in large towns.

Swallowing a Kex.—Some people are terribly exercised if they chance to swallow a fly, dead or alive, still such as accident is no more likely or alive, still such as accident is no more likely to be injurious than the swallowing of a imagine all sorts of fearful things and worry himself or berself into illness; but if blide on swallow large insects alives and thrive on them, it should not be expected that a little thing like it should not be expected that a little thing like a fly would hurt a man, In fact, at their tables, people eat and drink things that are more poissonous than house flies.

vinnes de beneficed by accepting in a paramit of posture.

It appears, therefore, that the posture during alsee is a matter deserving of some attentions from physicians, and that some actual therepeutic results may be obtained by looking after peutic results may be obtained by looking after its details.—Med. Record.

Position in Sleep.

where we have the contract of the policy of

Tribity.

IIAY FORK QUARTX.—Tribity Journal, Nov. 19:

C. C. Shattuck was in town Sunday from Hay Fork and expresses bimself as well satisfact unnel on quartz outlook in his neighborhood; in the unnel on the Maggalina, the ledge is showing up well; for the last 30 feet the vein is 12 inches in width and prospects good. We are glad to hear of the good show-

Тиимел.—A contract to run 700 feet of tunnel at s Cleveland mine has been let at \$3 per foot,

ground which he has also bought. The South Fork Co., Forest City, are preparing to open out in the Live Yankee ground, for gravel.

Live Yankee ground gravel.

Live Yankee gravel.

Live Yankee ground gravel.

Live Yankee grav

To mer con. All the COLD MINES.—Mountain Mestrenger, Nov. 19: John Burman was down Wednesday from the gravel cisin to normerly owned by 50. Wood and brought the cheering news that he had struck a set brought the cheering news that he had struck a set by Wide Awake drift claim, at Alabama Hill, is at the Wide Awake drift claim, at Alabama Hill, is rapidly progressing, and another tich prospect has rapidly progressing, and another tich prospect has been obtained. M. H. Mead has purchased the old Keystone quarts ledge, and will extend the main turnel 600 feet to work the ledge in the Alarini fruntel 600 feet to work the ledge in the Alarini fruntel 600 feet to work the ledge in the Alarini Pork from Mill of the feet of

to the rod.

GENERAL GRANT MILL.—Worth San Juan Times, lov, 19: The mill at the General Grant mine will near gent gain a few days. The track is laid from the upper tolthe lower tunnel, but cars will not be runing therefore until nest klonday.

BODIE.—Walker Lake Bulkeira, Nov. 16: Bodie is not dead yet. Earl & Co. have been loading machinery for the Learl a shaft for three or four days, four earloads have arrived and two more are expected. Another 16-animal team has been put on the road, as there is an increase in all kinds of freight.

Mono.

dieste that Supt. Med Deleves it rich.

dieste that Supt. Med Deleves it rich.

deste that Supt. Med Deleves it rich.

the Supt. Med Deleves it rich.

the El Dorado county is not confined to

the El Dorado county is not confined to

the El Dorado county as not supt. Fits with good te
suls; the Melton is looking better than ever before;

suls; the Melton is looking better than ever before;

suls; the Melton is looking better than ever before;

pleted; Thomas Day of Henry's Diggings has

pleted; Thomas Day of Henry's Diggings has

stress fire body of ore in his tunnel, alter tunning

peted; Thomas Day of Henry's Diggings has

stress fire body of ore in his tunnel, alter tunning

stress mence of ore in his tunnel, alter tunning

Valley, which is known to be one of the most valua
valley, which is known to be one of the most valua
ble mining properties in this section; the Parket

Valley, which is known to be one of the most valua
valley, which is known to be one of the encet valua
valley, which is known to be one of the encet alter

valley, which is known to be one of the encet alter

value, and prosperity in the mines of the county generally, and unless we receive some severe backset, we may

and unless we receive some severe backset, we may

and unless we receive some severe backset, we may

the child plant of the mines of the county generally,

the next year or 18 months,

Monno.

Monno.

Monno.

QUARTZ.—If one-half what is claimed for the El Doraco mine's late developments be true, if is the pest thing property in the county. One thing is certain, they are working it on a scale to indicate that Supt. Acre The is rich.

GEDAR GROVE MINES,—Mountain Messenger, 100v, 19: Thos, Bes-ler, one of the contractors for unning tooo feet of tunnel for the Exceletion Drift placed all the outside work and istal in their supplies to prosecute their contract The company expect to be under gravel, with 600 feet of tunnel, when they will commence to run a gangway eastward and breast out gravel, with 600 feet of tunnel, when ravine to rewash their tailings. The tunnel of the subject of the track and run at a grade of half an inch to the tool.

Sierra.

Gypsum.—Santa Maria Times, Nov. 19: A valuable ledge of gypsum has been struck one-half mile sast, of the oblute landing near the landing uses the landing uses the landing uses the landing. The quality is good, pure white, and appears to be inexthaustible. The steamer Bonets took 600 forms to San Francisco on Monday last,

Santa Barbara.

Monday this week we met J. D. Schuyler, the Monday this week we met J. D. Schuyler, the engineer in charge of the Sweetwater dam, also one of the tathers of La Pressa. Mr. Schuyler said: "Look bere, I have something to show you; something worth looking at." He carefully unfolded some tissue paper and handed us a fine specimen of coal, that came from near La Pressa. "It is an some itsue paper and handed us a fine specimen of thing worth looking at." He carefully unfolded to me tissue specimen of coal, that came from near La Pressa. "It is an tone a secidental fine. While blasting the other day we found a small vein of this said are working with full confidence." The sample certainly indicates with full confidence." The sample certainly indicates once thing—that there is a vein of coal in the foothills main the Sweetwater dam, and we shall anxiously await the results of the prospect.

San Diego.

Plumes, Mares.—Plumes Mational, Nov. 19; Mr. Keeneer of Indian Valley is putting up an enrich and with the Mares.—Plumes Mational, Nov. 19; Mr. Keeneer of Indian Valley is putting up an enrich group of the Edman mine, and will have it in turning order in a short time. The searcity of water in the mill, it will be turn by this season has made in the east of the turn by the season at the mill on the Hallered mine commenced authority of the mill on the Hallered mine commenced completed and the mill on the Hallered mine commenced taking out pay gravel this week. A force of men has been put on the Lost Channel mine, near the taking out pay gravel this week. A force of men has been put on the Lost Channel mine, near the sening to mill early as possible in the spring. In the plust, on the Lost Channel mine, near the burge to, at the head of Poplar creek, have men at the pring. Hore, or mill early as possible in the spring. Hore, burge Co., at the head will be purshed shead with up a large mill early as possible in the spring. Hore, burge Co., at the head of Mill set under will early as possible in the spring. Hore, burge of finding the Rich Bat lead, which has eneed been up as large mill early as possible in the spring. Hore, of Mill set ween Mill set in the spring. Hore, is the head of Storb I The Pittle, the ween Mill set vicinity of Batheder is a somether been of finding the Rich Bat lead, which has rever been of finding the Rich Bat lead, which has rever been of the singer mile singular in the spring. Hore, it is mine near say buck's Ranch. The Little Death of the intensity in the spring out 10 price of some pay, who intend running a tunnel at a considerable depth below the present works.

Ban Dlego.

Piumas.

Scorpion,—Since last report the east drift on the 300 level has been advanced yo feet, and is now concected with an open cut, started from the Seven-mile

ANDES.—Connection has been made the past week in the west britt the west britten the 550 been as ecurred. On the sto level the face is in quantit been advanced nine feet. The face is in quantit giving low assays.

MENDA.

WEADADA.

WEADADA.

WEADADA.

WEADADA.

WEADADA.

WEADA.

WEADADA.

COM. CAL.-VA.—EMINIPATIS, Nov. 19; Both will started up yesterday with their full complement which conveys power. The stretching of the wire rope and a contrivance consisting of the wire rope and a contrivance consisting of the wire rope and a couple of carriers. The stopes in the minimal has been and a couple of carriers. The stopes in the minimal and a couple of carriers. The stopes in the mine particular change to note.

Savace.—On the Goo level they have finished the or the connect with the color level. This upraise in the or the connect with the color level. This upraise in the will be sent and a couple of carriers.

Savace. On the Goo level they are stoping ore from hot be stoped to the stope of the will be sent and scoping the same as on the 750 level are connect with the color level. On the 750 level stope of the mine of the will be sent and scoping the same as on the 750 level are soon the color level fact of the start o

MEAVDY.

work.

PROM BUCHANAN.—Cor. Tuolumne Independent,
Nov. 19; The company will soon put a force of
that the mill will be put in first-class condition preparatory to starting it up. The mine is looking
paratory to starting it up. The mine is looking
up, and the Lynch mine tunnel is
dump ready to crush. The Lynch mine tunnel is
the cauperintendent that the tunnel had resched
by the superintendent that they have not as yet
with the superintendent that they have not as yet
by the superintendent that they have not as yet
when Olsen has commenced operations on the
southwest of this place. This mine was known in
former years as the Kibby claim, and is very rich.
Mr. Olsen has comenced about 3% miles
southwest of this place. This mine was known in
former years as the Kibby claim, and is very rich.
Mr. Olsen has comenced about 14. miles
former mine thoroughly.

PROGRESSING,—Tolumne Independent, Nov. 14;

There is some surf in mining on the south side of the There is some surf in mining on the south side of the Tolumne river. Work is progressing in the Belcher as Deer Flet never suspended operations because the statement young to the property. Dear Longton persection ore did not pay. Present owners will develop and the vicinity of the Belcher, to a New York party. It have not the vicinity of the Belcher, to a New York party. It have treed in the vicinity of the Belcher, to a New York party. It have treed in the vicinity of the Belcher, to a New York party. It will prove a paying vein.

Purchaser, I have parties bonding, many believed will of the Belcher, to a New York party. It may believe the vicinity of the Belcher, to a New York party. It may believe the vicinity of the Belcher, to a New York party. It may believe the vicinity of the Belcher, to a New York party. It will prove a paying vein.

Payor, on the Stanishae river, its miles now believed in the surface of the paying by ordinary win of Murphy's, Calaveres county. The above conducting developments on the payor of the

Tuolumne

which and good eleges ought to be found there.

The BONANZA.—The pump for dishining the shaft in the Bonanzas mine arrived in Minereville from San in the Bonanzas mine arrived in Minereville from San Francisco last Sunday, and will be set up and put in Francisco last Sunday, and will be set up and put in the and mineraville working the man the fact of the week, work in the based will probably begin the first of next week in the based of the week, work in the based will probably begin the first of next week in the Enterprise mine has a large as the Based will be begin to table of the tone. Day & Moor Based saken out about the ledge which shows very rich; the ore begin cushing this week in their astarts. Mr. Begin cushing this week in their astarts, Mr. Begin cushing the week in their astarts, Mr. Hicks, the lessee of the Engel mine, has put tone of the origing the week in their astarts. Mr. Begin cushing the work and is satisfied the ledge is not to be originated the ledge is our about 11 tons of very rich ore which be will be proposed the form of the core of mer and base made a statisfied the ledge is a stastist; he has soo tone of one or which be will be proposed the form of the tone of the forter of mer wind taken out about 11 tons of very rich ore which be will be supposed the form of the forter of the state of the state of the state of the forter of the state of the sta

MORE QUARTZ.—It is rumored that Mr. John Murby of Canyon creek discovered a pocket of decomposed quartz ou the upper part of his ranch, which yielded \$132. Canyon creek is in the quartz belt, and good ledges ought to be found there. THE ROMANZA —THE SUMMAZA —THE SU

ing made by him and hope that the mine will con-tinue to increase in value as work progresses.

time since the mine has been opened. The dumps, bowever, are full, and no "breasting" can be done till water comes in sufficient quantities to run the sontinuously, which will give employment to 50 men or more. In working down-stream from the bidsy continuously, which will give employment to 50 men or more. In working down-stream from the bidsy continuously, which will give employment to 50 men or more. In working down-stream from the bidsy continuously, which will give employment of the property of the continuously, which will be does not be sufficient of this mine. The "beadings" in the were but 56 feet about the company expects to will be 600 feet more of tunnel to run to reach a will be 600 feet more of tunnel to run to reach a will be 600 feet more of tunnel to run to reach a commence taking out giravel for this tunnel to feet more of tunnel to run to reach a feet works. The runnel of closings and expensive work.

THE HAZARD,—Herald, Nov. 19: This mine of channers of the more some months ago, were extremely good. The company expects to considering the advisory expects to tunning a pany is considering the daries of thouse world the leaves expense of hotsing to more months ago, were extremely good. The company pany is considering the advisory expensive to the in leagth would probably tesuing the more and give company expects to considering the company be sufficient to accorde to the company has experient to the works. The tunnel and thus avoid the feet only and the summer and give company be sufficient to the feet of the feet of the prospecting to the feet of the feet of the prospecting property.

PITMES. future. Jesse Vandegrif, if he had the sid of a litrele capital, would be able to show as good a mine as the best above named, unless all signs fail. As as whole, the present and prospective future of El Dorado is very bright.

UNARTY—If one-half what is claimed for the little of t

II)INING BUMMARY.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

OALIFORNIA.

MILLS STOPPED.—Amador Achger, Nov. 19; senderall introughour the county. There are stanged in the light of the total county. There are stanged in the county are county running to the total bare been idle for six weeks. The Gover is also at a standstill. Not a stanged in the stanged while stands of the county are stands of the county. Solved of the county in the stands of the county. Seekson feels it less that the castly soon one and, which is severely fell miles are seen idle for six in the stands of the county. Seekson feels it less than thoughout the county. Seekson feels it less than the stands of the county. Seekson feels it less than the stands of the stands

ciation of \$500, or 3bout 15, per cent of the value clime in sentilling on represents a cepter of the property.

The Martin White mire has lately changed hands, and is now being worked. Like many a location on the bods, it only needs development and milling.

Challed the control of the control of the property.

Challed the control of the control of

handsomely for a long time.

"Wark E. Dokado.—Placerville Observer, Now, Moy, and Mark E. Dokado.—Placerville Observer, Now, the Ohio House the other evening, shout the mines in the vicinity of El Dorado. Josh has spent many years in that neighborhood, and declares it as his years in that neighborhood, and declares it as his surface last. While the Springfield mine has belief that the prosperity of the town is now an assured sect. While the Springfield mine has been the only mine paying dividends for years, it has been the only mine paying dividends for years, it has been the only mine the paying dividends for the laurels as the best mine in the county. The El Dorado has a seeveral others are several others closely competing for the laurels as the best mine in the county. The El Dorado has a ledge more than the early state of the sare belter one than ever before, as is also the case with the policy as is also the case with the probabilities in favor of a period policy of the paying with the probabilities in favor of a period policy. The More was a seried as good manner ledge. The More was a seried as good mine that will be thoroughly opened an interestly manner ledge. The More was a seried as good mine of the proposities in favor of a period policy.

DENTGRAR.—Just as soon as water is got through the California Water Co.'s row funne, the mill at the mill at the consideration on Wild Goose Flat will be started up on high-grade ore. This mine has been paying bandsomely for a long time.

Were Bt. Dogang.—Baseerville Observer, Moy.

El Dorado.

the upper tolke lower turnel, but east will not berupe in the content and the

the content of any of the miles and the speed of the miles of the mile

eent strike in the winze improves as depth is atlanced. BEST AND BELCHER.—The double compartment best and been sunk so feet; total depth, 114 feet.

POPPMY formation in the bottom of the winze, and returned been occupied in enlarging the week they are trainbeing the same.

JADY WASHINGTON.—Are still drifting on the same returned betweek they are returned by the same returned by the sa

workings of this mine are in vein matter.

CHOLLAR.—The mil will not start until after the electric works are up and furnish light. This will reselv in the coming week. The mill itself is ready to start so stamps any moment.

OEST.—This mine is looking well and yielding its cent gold per ton. It would keep a ro-stamp mill running steadily.

HAYWOOD.—Are sinking in the winze, stoping above the tunnel and driving the tunnel. The recent gold per ton whose improves as depth is attained.

PARDORA.—Are sinking the shaft from the 50-foot workings. It will be sun!; to a depth of about soo leet, when drifts will be run in the vein. All the workings of this mine are in vein matter. Chot, a Land will will not established the after the start until after the

a portion of it.

CROWN POINT,—The goo-level south drift from the shalt has been cleaned 35 feet aince last report, and it now has about 80 feet turther to go before it will be where they will commence to crossout, Its total length is now 300 feet.

BROWN AND LECRUITS,—This mine keeps all the astatras on the Carson river tunning, and could keep a to-stamp null, if it only had one. The ore west drift on the Carson river tunning, and could keep a to-stamp null, if it only had one. The ore west drift on the Carson river tuning from the main gest drift on the 50 level.

BULLION,—The southwest drift from the main total distance, 130 feet; The stand stand attained a feet, and distance, 130 feet.

The main south drift was advanced 25 feet; total distance, 230 feet, 130 fee

machinety, at a considerable reduction using the horsting machinety, at a considerable reduction in the tand monthly expenses.

HALE MUD MORGEOSS.—On the top of level have started Mo, 4 exat crosscut from the face of the being in quartz giving low assays. The last 12 feet from the bottom of the winze on the 1350 level has going from the bottom of the winze on the 1350 level has going except.

UTAH,—On the 472 level exat crosscut Mo 6 beet cold length, 455 feet.

UTAH,—On the 472 level exat crosscut Mo 6 durit and the wall at the west wall of the velta.

UTAH,—On the 472 level exat crosscut Mo 6 durit and cap.

The crosscut has cut into the west wall of the velta.

ALTA.—The mill is now running night and day, from the card of the crosscut have advanced a north and at the mechinety is running night and day, and all the machinety is running night and day.

ALTA.—The mill is now running night and day, and all the machinety is running nightly and the ballety of the sating on the ross of 150 or on the 232 level is advanced a total distance of 150 or the capitage of 150 or the capitage of 150 or on the 234 level is advanced a total distance of 150 or the capitage of 150 or on the 250 levels.

The shalt is impected down 150 feet.

ALTHA AND EXCHIGUER.—West crosscut No. 1 or the capitage or the cold divise on the capitage or the cold caston irro feet. The now in soo feet, and the south drift is in 30 feet.

The shalt is impected down 150 feet as a level and 150 levels.

The shalt have the consecut have a consider the last of or one on the one of 150 or one of

Canyon. This connection, besides answering for an the capte from the shalt and as a drain tunnel from the mine, will enable them to prospect the ground to a depth of 300 feet without using the hoising machinery, at a considerable reduction in the monthly expenses.

Here we will be a supplementation of the considerable reduction in the monthly expenses.

MATURAL GAS STRIKE,—Georgetown Courter, Mov. 20. A by gathle of neutral gas was made in Melon. A of the Florence Oil Refining Company in Melon. So the Britan of Melon. So the Melon of Melon. Melon.

## COLORADO.

DOLDA.—Prescont (Journey, Nov. 14: Miles Archine ago, and seed about one mile of below Hassayampa bridge. Archine as followed to the Howard gold and is of the interest of the followed gold and is of the interest of the followed gold and is of the interest of the seed of the creek, and seed of the creek, as followed as a followed and is of the seed of the creek, the followed as a seed of the creek, the creek of the seed of the creek, the creek of the seed of the creek, the creek of the seed of the creek district.

All this point as once commence are being made to of the creek district.

All the seed of the seed of the seed all the seed of the creek district of the seed of the creek district of the seed of th

AN IMPORTANT STRIKE - Silver State, Mov. 16: George feets and their, Died, who returned from Kye Ealth feets and their Judy, as a very important strike has been made by W. T. Hales in the Reno mine. A large board of high-grade ore has been cut in the lunnel, and excitement tunns high among those owning claims in the vicinity. The mines is owned by Reno men, who commenced to develop it a short lime ago.

## Rye Patch District.

Biossom, aided by Eastern capitalists. In order to long, and why such valuable property abould lie idle so long, I was informed that over half a million dollars had been expended on the surface for the ratioad, he mills on of water, before a single pound of one was curbed. Now, however, nexotations are pending through which the whole country will be opened up.

THE GEORGETOWN STRIKE.—Cor. Southwest/Sem-tived, Nov. 16: Having visited a new strike four to five miles south of this place frequently of late, I will give you some items of interest. In the first will give you some items of interest. In the first camp, as the ore is not only exceedingly rich but it lies in streaks and deposits in the silutian lime and on the contacts between the lime and porphyry dikes

## NEA WEXICO.

regularity.

(Grante: —Phillipsburg Math, Nov. 17: Everything it are not of stockient glade and tentate of production thing is running smoothly and the rate of production continues the same. The output for last week was some continues the same. The output for last week was 871 oz. silver.

Hope: —The mine and mill continue to produce their regular amount.

GEORGETOWA AND CARLE DISTRICT. — The main shalt too feet deeper, was started up again shout the middle of last month and is now running. Pyrenees mill, which was shut down to sink the Pyrenees mill, which was shut down to sink the heart too feet deeper, was started up again main shalt too feet deeper, was started up again from the point to about so days. The Georgetown Conition of the started works on the second run after a cleaning thom the being on the second run after a cleaning thom the bond to Messra. Wattenweiler & Brainnober, is now young idle again, the negotiations undertaken by hond to Messra. Wattenweiler & Brainnober, is now these gentlemen having been killed by the alien law, these gentlemen paving been killed by the alien law, these gentlemen paving been killed by the alien law.

In 1885.

The POORMAN.—Inter-Mountain, Nov. 14: B.

C. Kingsbury yesterday received from Supt. Clark
of the Poorman mire some obsering information in
regard to that valuable property. The face of the
middle tunned, where the ore had been squeezed for
a few feet, has opened out a wider ore body than
ever, with an increasing proportion of the coarseever, with an increasing proportion of the coarsegrained galents, assaying 570 in silver and 70 per
cont lead. The face of the lower tunnel is being
cont lead. The face of the lower tunnel is being
driven all in ore of excellent grade and remarkable
regularity.

AROUND PHILLIPSBURG,—Phillipsburg Mail. The miners and prospectors of the district surroundaring Phillipsburg are less willing to suspend operations during the coming winter than they ever have tions during the coming winter than they ever have as more of an interruption than ever before. Many of the small veins and prospects are in just such of the small veins and prospects are in just such will commence upon them, and the activity through will commence upon them, and the activity through the winter can continue. With this state of through the winter can continue. With this state of through the winter can continue. With this state of the winter can continue. With this state of the control of the sample of

## .ANATHOM

M'CALLUM MOTES.—Elikenburgh Capital, Nov. 14: Mr. McCallum, who is keeping store at McCallum, was in the city yesterday. He reports great ceitivity in the placer to this distruct and asys consider estable gold is being faken out. His store is in the center of thate the mans creek and the center of thate for await, Williams creek and the ceives over his country, and in the course of trade he receives over his country, and in the course of trade he repulsed more development this year than for several years more development this year than for several years once development this year than for several years more development this year than for several years of the indications are that there will be a pact, and the placer mires. In the past lew weeks the placer mires. In the past lew weeks to county has been a lively flurty in iron mines, and the county has been a located for miles around. Twelve me placer ilocations have also made, and the man and the me with the placer incations have also been a located for miles around. Twelve

PREK CITY.—Cor, Salt Lake Tribune, Nov. 20.

The Crescent Comp. ny's shipments for the week ending Movember talks monuted to 150.000 Bs. of the confing Movember talks monuted to 150.000 feet.

The creation at the orth end is now in over 500 feet.

The station at the shaft is completed and duffling will at once be commenced from that end. The conficuency of the shaft is once be commenced from that end. The wills to once be commenced from that end. The wills to once be commenced the shape of the shape with the shape of th

## .HATU

may look to see the earny worked for years to come, how to be the same are now employed in mining on About 75 men are now employed in mining on About 75 men are now employed in mining on Galice creek. Of these 25 are white and 50 Chinese. The work being done now is 2-by ground-aluicing. The content of the property of the property. The made a mining every integer of practical treated the property of the property of the property. Among to there places he wants in the property of the made a mumber of practical tests of the known as Coker First. This ground he found very place to make it is proved to the property of the property. Merste, a mining the property of the property. Merste, and the property of the prope

ROBINSONVILLE.—Bedrock Democrat, Nov. 14; W. W. Travillism, a gentleman who is perfectly beforeble of judging the metric of demerris of both placer or quartz mines, has returned to the city from quite an extended tour of this mines and the end of the control of

weighting in the camp invened up greatly. Last and in incompany has had month was the largest pay-roll the company has had month was the largest pay-roll the company has had month was the largest pay-roll the company has had material charge has occurred since has reports were formed to the cycle of the over in this new camp invened the klonenth literatured street the county is working the transmission of late. The during the transmission of late of the cycle of the over in this new camp in working farts rate and fair who were found in the special of the core in this new camp in the bridge in the shall. Elk klountain the progrees is being made in the shall. Elk klountain the progrees is being made and the street when to the eye there is nothing at all more throughly electron the same of the core in this new camp in the bridge in the shall have been attracting a great deal of attention of late the contains a conting the transmission of late of the eye there is nothing at all more throughly the called the conting when the conting when the contains a conting the transmission of late of the eye there is nother to convert that the company having in the one of the shart when the conting with the stopes and derifts a crosscut connecting with the stopes and derifts at late of the eyes theying mines and will take the card and every properting with the stopes and derifts all displaying a propert of the intention to start immes, in the more than a business, the work of this mine can be more than a business, and the many places are completed they will connecting with the stopes and derifts all displaying a propert well.

And the presents are dealt to be connecting with the stopes and derifts all displaying a propert well.

Belief in least the can will be should be captured the connecting with the stopes and derifts all displaying a propert well.

Belief in least the capture and derifts all displaying a propert well.

Belief in late of the capture and the capture of the intention of mineral the capture and the capture of the

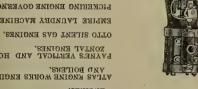
# GREGORY &

San Francisco, Cal.

Cor, Fremont and Mission Sts.,

INDORTERS AND DEALERS IN ALL CLA SES OF

# HOAN



KORTING INTECTORS AND EJEC-

H. W. JOHNS' ASBESTOS PACK-ING CO'S KUBBER GOODS,



SICKLORD'S POWER DRILLS, BEMEUT & SOÙ'S MACHIUISTS CHINISLS, LOOFS' NEM HYNEN WYNNE,G CO',Z WY-MACHINERY, WOODWORKING MACHINERY, WOODWORKING

BRAINARD MILLING MACHINES EXHAUSTS. BLOWERS AND SERIN BYND SYM BLADES. BUAKE'S IMPROVED STEAM

massey's steam hammers, schlenker's bolt cutters. Holloway fire extinguish-ers. REVDIET COSHIONED HYMMERS TURBINE WATER WHEELS,

We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the rapidity (300 strokes each per minute) which which they run. There are 4 shoes in each stamp, so that there are 4500 strokes of the shoes on the dies per minute, Less power is required than in that their mill to do the same smount of work.

The Mortar has screens at both ends, giving ample discharge. There are no cams or tappeets to wear or he adjusted. The stamps adjust themselves as the shoes wear.

DOABLE "ECONOMIC" STAMP MILL

AUTOMATIC ORE FEEDER

Goes with each Mill. We also have a suitable

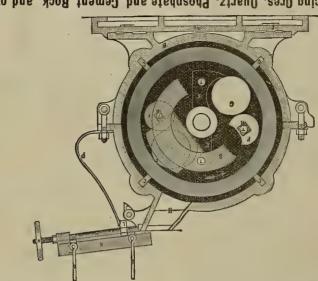
Several Mills are now in the mines doing excellent work. The "Economic" is not only a mill for small mines, but we believe it is destined to superseder the old stamp in mills or the Breaker.

TATUM & BOWEN,

SAN FRANCISCO, CAL. 34 and 36 FREMONT STREET,

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc.

# CENTRIFUGAL ROLLER THE FRISBEE-LUCOP MILL,



most rapidly and economically. Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Cement Rock, and other

All substances when ground leave the mill in a finished state—no regrinding being necessary. Automatic Feed. Wearing parts of Steel and Forged from.

BLAST AND SCREEN MILLS.

Capacity, 24-inch mill, 1 to 2 tons quartz per hour, to 60 mesh; 3 tons cement or phosphate rock per hour, to 60 meah. Wearing parts retie no fitting, tessify and cleephy replaced when necessary. Cost of repairs differs with dictumstances. Loss than 1c per ton for phosphate and cement rock. Maximum, 10c. per ton for hardest quarts. For further particulars and prices address 

ERIZBEE-LUCOP MILL COMP'Y

And 461 Howard St., San Francisco, where a Mill can be seen in operation and ores HOOKER & LAWRENCE, General Agents,

145 BROADWAY, NEW YORK

146 BROADWAY, NEW YORK

SOLE AGENTS FOR

YND BOILERS' VLLAS ENGINE WORKS ENGINES ENGINES' MITTIYWOON BEOS, HOISTING

PAYNE'S VERTICAL AND HORI-

10DROW ENGINE GOVERNORS, PICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY,

NATHAN AND DREYFUS OILERS. TAUITE CO'S EMERY,
AND MACHINERY,

DISSTON'S CIRCULAR SAWS,

TVNE VND BODFEX SVM MIFES

YACHT ENGINES.

# ENCINES SUG BOILERS

FROM 2 TO 100 H. P., ALWAYS IN STOCK

### OIF2" AND LUBRICATING SUPPLIES

## LIFE-SAVING RESPIRATOR

Entirely Prevents Lead Poisoning

and Salivation.

The most perfect appliance for people engaged in Sanetirng, Dry Chushing, Gurna Works, Quicksilven Mines, Lead Corroding, Threshing, Parken Stock-driving, Threshing and Stock-driving, and all other competions where there is dust, poisonus vapor, or had codor.

In Feeding Threshing Machines, and similar work, they are indispenses being the competions and similar oran be inhided when they are worn.

The Respirators are addeadled to approval siter trial, and if not entireder are worn.

The Accordance is a constant of the control of the control

# THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

GIVAL FOWDER OF DYNAMITE,

Of Different Strengths as Required.

GELATINE-DYNAMITE, Stronger than Dynamite and even Safer in Handling.

OPHEL'S EXPLOSIVE GELATINE, which containts and even Safer in Handling.

JUDSON POWDER IMPROVED.

FOR RAILROADS AND LAND CLEARING. Is from three to tour times stronger than cordinary Blast-ing Powder and is used by all the Railroads and draved Claims, ass it breaks more ground, pulveities better and saves time and money. It is as dry as the ordinary Blasting Powder and times afresh;

BYNDWYNN' NIELSEN & CO.

GENERAL AGENTS, SAN FRANCISCO CAL.

## MINCHEZIER HONZE

44 Third Street, San Francisco, Cal.

This Fire-proof Brick Building is centrally located, in the feathfriet part of the city, only a half block from the forend and Palace Hotels, and close to all Steamboat and Ealivad Offices.

Laundty Free for the use of Families Here The Gold Batter Free.

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE, Terms, Board and Room, \$1.00 per Day

T BOOFEK

SAN FRANCISCO. DOMNIE B. I. P. CO. Cal. Sugar Refinery, Etc.

Market St. Cable Railway,

SEND FOR CATALOGUES. 204 MARKET ST.,

In use on the PREVEUTIVE AND REMOVER BOILER SCALE

DOWNIE EUCALYPTUS

Standard Oil Company,

CAPS and FUSE for Sale.

U. S. Navy, Pacific Coast S. S. Co.

# Aetallurgy and Ores.

## SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office. COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, .... MANUPAOTURBRA OF ....

LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

## JOHN TAYLOR & CO., Under Chamberlin Patent,

AND MILL SUPPLIES, VOSVAERS, WATERIALS, MINE

GIZLS, GLASSWARE AND SUNDRIES, ETC CHEMICAL APPARATUS AND CHEMICALS,

114-118 Pine Street, - San Francisc We would call the attention of Assayers, Chemis Mining Companies, Milling Companies, Frospectors, de to our full stock of Ealances, Furnaces, Aussies, Cru bles, Scorifiers, etc., including, also, a full stock Diemicels.

## NO. 28 STEVENSON STREET, Nevada Metallurgical Works,

C. A. LUCKHARDT, Manager.

Отев worked by алу Ргосовв,

Assaying in all its Branches, Maters, Waters, etc. Ores Sampled,

Special attention paid to Examinations nost suitable Process for Working Ores. Working Tests (practical) Made, Plans and Specifications furnished for the

O. A. L'UCKHARDT & OO., (Formerly Hubn & Luckhardt, ) Mining Engineers and Metallurgists. Mines; Plans and Reports furnished.

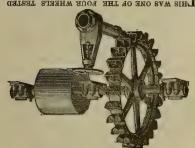
# METALLURGICAL WORKS,

S18 Pine St. (Basement,, prince of Leidesdorff Street, - - SAN FRANCISCO

Assaylug and Analysis of Ores, Minerals and Watere. Mines Examined and Reported on. Theories, instruction given Treating Ores by in oved processes.

G. KUSTEL & OO., Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL.



L. A. PELTON, Nevada City, Cal. Partie & LACY, 21 and 23 Fremont Street Francisco, Cal.

INVENTORS, TAKE NOTICE!

268 Market St., N. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, tin copper and brees, L. PETERSON, MODEL MAKER,

## QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE TA

11GS and TROMMELS

COBNISH BOLLS, FRASER & CHALMERS,

**ENCINES AND BOIFEBS**.

This Mill as a Crusher and Pul-verizer is without rival.

astrow gaitlems gai -bael ai noitateqo ai al

STURTEVANT MILL.

'SdWnd

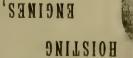
MACHINERY,

**ENCINE2** 

PUMPING

CORNISH

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES



HALLIDIE'S

WIRE ROPE

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado. TRAMWAYS,

FRASER & CHALMERS, General Agents, Col.
Obicago, Ill., and Denver, Col.

1AMES LEFFEL & CO.,

These Whoels are designed for all purposes where limited quantifies of water and high beads are unliked, and the set grantedeed to give more power is transmitted direct to shating by helts, dispensing with gearing.

Estimates furnished on application for wheels specially built and adapted in Estimates furnished on application for wheels specially built and adapted in Futher information are no obtained and this form of construction, as well as the sorbital and adapted in the state of the set of the set of the set of the set of cost, and the set of the set

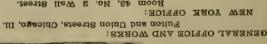
Mining Turdine Water Wheel.

JAMES LEFFEL'S

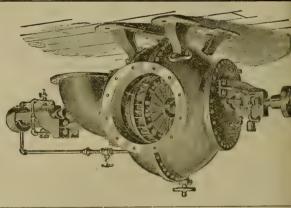
or 110 Liberty St., New York.

MEXICO OFFICE: No. 11 Calle de Juarez, Obibuabua, Mexico.

UTAH OFFICK-SALT LAKE CITY, UTAH.



NEW YORK OFFICE:
ROOM 48, No. 2 Wall Street.



# COLD MINERS

Quartz, Gravel and Placer Mines!

Springfield, Ohio,

# **SMITAMASJAMA**

HYAE LEGAED THE WORT ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded

Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Assayers' and Mining Material, 112 to 118 Pine Street.

San Francisco Gold, Silver & Nickel Plating Works,

663 and 656 MISSION ST. SAN TRANCISIOO, CAL.
E. G. DENNISTON, Proprietor,

NOTICE.—My Silver-Plated Plates are well known and used everywhere. They have proved superior to all others in durability and welght of Silver.

# THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed



### SHAREHOLDERS MINING DIEECTORY,

	2TVIN22T22A												
лотним.	E	.2 нянто	GNA	<b>Равая</b>	SCIENTIFIC	α γ <b>v</b>	MINIM	NI	<b>ADVERTISEMENTS</b>	MOAT	<b>ча</b> святиТ 7	OMPILED BVRRY	O

7 40O		Montgomery St	908япэуяН ₩ А	A SDRYBVI O	Con California & Va M C	н
PAYABLE	AMOUNE,	OFFICE IN S. F.	SECRETARY,	LOCATION.	MAME OF COMPANY.	ŀ
	SHT.	IN THREE MON	DENDS-MILE	LATEST DIV		ŀ
7 29G	IsuaaA	Montgomery St		sbaveM,	Succor Con M Co	ı
TS VOVI	lsbanA	3°9 Cali ornia St	J M Buffington	CoNevada	Puget Sound Iron Co	Į,
Dec 6	lsuaaA	Montgomery St	3 15 E miliote308	Nevada	Mexican M Co	н
9 29 C	lsunaA	Montgomery St	W L Brown 40	Nevada	Baltimore S M Co	ш
		Als Market St			Butte Creek Hid M Co	Ш
.STAC	MEETING	OFFICE IN SE.	_	LOCATION.	MAME OF COMPANY.	I.
		and business and	a ot sonitari			н
at gomery at		and M.C os recd		Nevada 36	Union Con M Co Virginia Creek Hyd M Co	Ш
38 sintotilsC		6Dec 10A Berry. 5Jan B, M Buff	24O t 6Vov 1	California. Z	True Con M Co	ľ
310 Pine St	Year.	I Dec 15 G R Spin	10Oct 7Nov 1.	22 В в у в И	Scorpion S M Co	ľ
ntgomery St	OM 808	nuH J L 52 26 I Hun			Maydower Gravel M Co	ı
St Kearny Sc		mrish O P. dat 3.	I DOU. AT YON . 10	Oz bigrofileD	Mountain M Co	ш
ntgomery 8t		0Dec 30 W L Oliv		SodabI	Heath M Co.	Ш
ntgomery St	oM SSa	2Jan 12. T Wetzel		TdsbaveM	Gould & Curry M Co Gray Eagle M Co	ı
38 smoome 8t	pg313	5Dec 12.,R Connin	2 VOVI IS 400.,60	California 2	Guadelupe M Co	ı
helan Block		7Jan 4WJ Glea	20Nov 11Dec 1	Iguoxra	Fisher M Co	ı
ntgomery St	M A22 M. Sai	7Jan 9T.F.Holli		I BROSITA	Felice M Co	ı
38 signofilsO	) 614 L bi	1916c 30 Stadfel	1 99Q,,3 VOV., 30	Isbayevi	Found Treasure M Co	ш
18 signostise				Galifornia	Chicago M & M Co Centr. l California Oil Co.	ŀ
DICKOMELA BE	OM SZG		YOM 62 450 01	California 27	Champion M Co	ш
ntgomery Bt			I-5c, Oct 21, MOV 2	California 1	Comanche M Co.	Ι,
38 oaiq 088					Atlantic Con M Co	1.
OF BUSINES	RETARY, PLACE		AM'T, LEVIED. DELI	LOOK TOOL NO.	COMPANY.	
		'SJ.N	THE WASSESSE			П

# el Reduction & m. r King M Co... Francisco Copper M Co... dard Con M Co...

'ean	EXPLANATION.—Ol. for clear; Cp., cloudy; Fr., fair; Fy., foggy; — indicates too small to measure. Temperature																							
			81.				10.				100.				00.		<u> </u>		03				10.	Total
Uy.	S	79	18	Er.	AA.S	89	το"	Cy.	N	22	00	GA.	W	09	00	Fr.	N	09	00'	O	ME	36	60.	Vednesday
GA:	8	<b>79</b>	Ŧ.	Oy.	S	29	00*	Er.	M	22	00	CJ.	N	79	co-	·ΔO	N	79	00	Cy.	WN	ŦŦ,	00.	Vebesul
GA.	WM	79	00"	Er.	8	22	00.	Er.	N	29	00.	or	N	09	00	CI'	N	₹9	00.	CZ.	8	<b>₹</b>	00	YabnoM
Gľ.	WW	<del>1</del> 9	00.	cı*	W	22	00.	cr	IN	79	00.	CI.	ME	₹9	00.	Cr	N	<b>5</b> 2	00	Cy.	WN	0₹	00.	yabanë
CT	м	₽9	00.	GF	N	ŧ9	00,	CI.	эв	20	00	OJ'	MN	02	00.	CJ.	N	02	00	· 5	MN	11	00.	Saturday
Cy.	Œ	<del>7</del> 9	00.	Oy.	SE	<b>7</b> 9	00.	CF	WV	69	00.	GI.	WM	89	00.	GI'	N	<b>₹</b> 9	00.	Cy.	SE	38	00.	Lebita
OF	A	09	00'	GF	MS	₹9	00,	Ær.	W	89	00.	GI"	N	₽9	00	GZ.	N	<b>₹</b> 9	00.	Qă.	ΜN	ÞÞ	10.	vabawd]
-		-	-	-	-	-		<u> </u>		:	-	-	-	-	-	_	-:	-		_	:	:	-	
Ber.				her.				her				her		:		her.				her		1		Nov. 16-22,
Westher	un,	Temp	Rain.	Weathe	Wind	Temp.	Rain	Weather	Wind	Temp.	Rain	Weather	Wind	Temp	Rain	Weather	Wind	Temp	Rain	Weathe	Wind	Temp	Rain	
F.	<b>A</b>	E4	#	<del> </del>		H	PE		<b>F</b>	H	PE			H	E	=	-	E	##		75	[4	PA	DATE.
'0.	ge (	Iα	85	.891	<b>18.0</b> ]	IA (	Los	.00	rcta	LOI,	H.8	.oti	aeu	1.61	Sac	.A	nie	l be	ਬ	<b>a</b> .	T TO	ltto	ď	
		['\	.B .1	l 'sd	COT	LAIGE	eg Ia	agie	3¤88	Serg	'WO	GOR	NOS	NET	Δq a	eded	भ्राप्	aj a	olta	olidu	or D	pet	falor	· आ
				<b>'</b> XI	CICI	M	H	H.I.	ਮ	Od	23	H F	1.1.1	<del>ए</del> ज	Μ	JAS	38	OO	Ω	Lift	IO.	AG		

San Francisco Metal Market,											
town Moton contenent roll											
60 Exchequer17( 475 Utah3.60 700 Gould & Umry1350 Yellow Jacket74											
00 Condidence 21   60 Syndiente 20   62 Condidence 21   62 Condidence 21   62 Condidence 21   62 Condidence 21   62 Condidence 22   62 Condidence 23   62 Condidence											
100 Con. Imperial 3   290 Union Con4.75											
50 Confidence 124 50 Syndicate15c											
So Oballonge,, 3 (0) Sierra Mevada (2) (1) (2) (2) (2) (2) (2) (3) (4) (4) (4) (5) (6) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7											
7 shavev straig 300 10.8 , and delado 052											
150 Сгоскег95с 150 Savage											
500 Саледоціа799 350 Рест706											
1135 Crown Point 108 450 Peerless July											
1050 Con Va & Cal 24 300 Potosi 83											
470 Chollar 183 200 Occidental											
820 Bulwer 3.00 Overman. 3.00											
o Sc											
570 Bullion 3.70 700 M Bonenza											
200 Baltimore3 4" 530 Nev. Queen 3 4"											
170 B. & Belcher 128 50 N. Belle ls 84											
06.5asiasiasi Mesisasi 200											
00 Alpha Argenta 200 Lady Wash											
08.1											
68 L											
WEDNESDAY Nov. 23,   680 Hale & Nor5.50											
Sales at San Francisco Stock Exchange.											

		Market.	Metal	X10X	WeM
Ŀ	@ g	3			Flasks, old
-	( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (	D T			Павка, пет
00	8ED 0	) TE.		feen out v	Obsreosl
98 09	2 0 g				INPLATE—Coke.
9T		4 4			Maylor & Co
91	D 54				Machinery
9	9	******			Tlow
-	<b>1</b>	********	89Zis	Tranibro.	Black Diamond,
98	@ 91	T ********		τρ	reel-English,
	<b>2</b> 0 €				Ohilled, do
	Ø 0	7	Own Small	TO %	Виск, ф рад
	<b>2</b> 0	3 1 , 24.8d 错 , q	Ord ved	009 40 %0	Sheet, discount l
92	8 (0) 8 (0) 8				Bar
74	0 00				EVD-FE
н	@ 0i	TC********			Shotts, No. 1
-	@ 0	3 22		•••••	Oregon Pig, ton
00	0 (623	12	******		Oregon Pig, ton
00	98 6 -			No. I. tor	Eglinton, ton
00				···· TOR NO	ком—Слепцатво
00	020 -				Fire Box Sheets
137	0)\$7	ř			Ingut
-	Ø 6				Sheathing
12	e 6				
					OPPER—
19	Ø 9				Armagosa
L	@ <del>8</del> 9			ouibran	offax—San Ber
	881 '88 83' 1885			weak dan	ONT THOMET THE

to segrenting present of the state of the	
Prices generally ruling for metals not regularly dealt	
tices issued at \$4.30.	
LEAN Dull at \$4.20@4.50 spot. Transferable Mo-	
ferable Matices (Lake) issued at \$12,35@	
COPPER-Firm, spot closing at \$10.45@Il 25. Trans-	ı
York Metal Exchange Market Report":	k
The following is the latest by mail from the " Mew	å
COLCEBITARE-239.	ä
Lead-\$4.324.	
IRON-No. 1, \$22 00.	ð
COPPER-LAKE-\$12 90@12.95.	
BORAX-54008c.	
and along our man and	ä

n on call at the M. Y. Exchange, covering extremes of buyors' and esleps' vtows. All pompt delivery. Answering response of the first service of the first se

		коряпко.	y Ac	8. F. Stoc	;	
αţ	Sales	Hig'hest	BRB	Lowest	10	$\mathbf{flable}$

						VOV.		AON	Сомтаму,
	8.26 02.8 1.8.1	08 I 60.8 66.1	3.45	3.00 3.45	79.8	8.35 1.35	3.70	01.5 01.5 1.35	AltaAndesA
1	SI.	28	FOT	02°	09.6	00.8	₩.	. 28	Вейсвата
	37 £	8.00	8.50 2.50	00.7	01.2 29	. 89 80.8	08.2	69.2	Buttion
	07. 1.15	09	60.1 65	99	GI.I	60.1	62, I	1.10 2.00 2.00	BaltimoreBaltimoreBelle Isle.
	3.00		37,8	00.2	97 F	00.7	09°6	3.40	Bentonnotnes
ĺ	1,10	7.23	. 90 52	181	₹2 <b>I</b>	₹91 06′	1.05 181	89I 06	DUIWET
	3.20	9.30		01.2	c1.2	3,55	2.75	00.2	өздөлгөй
	8.2 87	28°Z 10 19	67.8 401 03.8	57.8 01 3,00	01'8 01 29	06°8	68 01 08.2	62.6 02.8	Chollar Confidence Confidence Caledonia
	15.	09	c9.	cc.	U9.	99.		09	Caledonia.
	T.12	38 00.1	06°	82.8 88.	96°8	82.7 88.	00'I		Orocker
Į	GP.		dI	OI.	09	99"		05	Central
-	00.7 07.1	29 T	00.7 07.1	83.3	02.İ		00.7	oc. jč.i	Central Dudley. East B. & B. Exchequer Exchequer
	00.1	38.4	%G G1.15	09'7	09.7	1.40	8c	01.4	Gould & Curry
ı	 #g	92.4		9 <b>1</b> 'Ŧ	cr.4	36.8	 NF F	01.3	Halie & INOTOTOSB
	08.	05.	09:	0F1 09	gg.				BMOT
	1.70	97.2 97.2 97.2	1.85 03.2	05.I		9₽° T		1,50	Julia. Justice. Kentuck. Lady Wash.
	68. 04.2	ōī.s	06, 00,2	00,1	• • • •		96 T	66,	MATTER WILLIAM
ĺ	7.75	92.9	52.7	62.8	64.00 54.00	99'7	2.00	0€.30	M ono. Mexican offait, Diablo
-	60. k		00 I	88.	30.£				M.t. Diablo Northern Belle Navajo
	08.8 87.8	00.8 di.8		67,8 08,8		OL F		\$7.4	Navajo North Belle Isle Niag 13
	92.20	06.I				01,4 6,10	62.2 64.	00'Z	Nev. Queen. North G. & C Occidental.
ı	3.00	all	tli	06 I	09'2	2,30	3,05	01.2	naqO
	8.75 2.00	2.45 6.75 1.50 7.07,	1.50	1,30	E 1	75.15 75.	1,40	GI'I	PotosiPetrless
1	58.	04.	07.	09.	 99°		OT.	***	Teering T
ı	97'6	62,8			24	٠.,	žŁ.	06.50	Silver Star. Savage Seg. Belcher. Sierra Nevada
ı	06*	6.25 04.	00.7 00.7	01.	0¥*	4.55	87.⊉ 0≱,	4.30	
1		**		77		77		1111	Silver King

## Complimentary Samples.

3.60 \$2.80 \$2.80 \$4.80 \$

Persons receiving this paper marked are requested to examine its contents, terms of subcaription, and give it their own patronage, and a seription, and give it their own patronage, the cursal, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Butten only its influence in rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a nubscriber, please show the paper to others, and continue the subcariber, please show the paper to others, and continue the subcariber, please and the paper to others. Persons receiving this paper marked are

doubtless sid the mining community materially. The mining interests of Arizons have rially. The mining interests of Arizons have bargined somewhat of lets of Territory has been too much neglected by capitalists. There are miners who have worked there for opportunity to dispose of ores or claims. This ought to be changed, and can be, if the business men of the different communities will lend their sid and countenance.

## Miners' Wages in Nevada County.

The following address has been issued by the miners of Mevada county, California:

The following address has been issued by the miners of Meyada county, California:

WHEREAS, The Supreme Court of the State of California:

1 of Californis has decided gold and silver mining silver mining silver miners as the coulative industry, and not an actual necestary of life, and gold coin being the estadard and the production of the same being desigerous and the production of the same being desigerous to life, and gold on the entirer; berefore be it Mesolved, First, There miners a Minera' Union.

Mesolved, First, The miners a Minera' Union organize of miners a Minera' Union.

Mesolved, First, The wada county, California, do betwoyn organize of miners a Minera' Union.

Mesolved, First, The wada county Minera' Union.

Second, First we have all the miners, encounty the miners of the vicinity of Nevada gineers, bleckemiths and millmen employed in and sround the mines of the vicinity of Nevada county to the miners of Carae Valley Morth Bloomield, Could, That we do respectfully invite the univers of Graes Valley Morth Bloomield, County Third, That we do respectfully invite the universal third and make the Olding Morth Bloomield, County this county, and frame a constitution and districts and select delegates to join in hand with mineral state of this State.

Is was of this State.

Bays of this State.

Pourth, That we frame a standard of wages throughout this county and maintain and same the same to organize; and maker and maintain and with the mobservance of the laws of the State.

We obtain a sad maker and maintain and of wages in observance of the laws of the State.

in observance of the laws of the State of Caliin observance of the laws of the State of Californis; and
WHEREAS, The miners of this county did
join in with the mine-owners and endered all
the assistance in their power to defeat the
county is depending chiefly upon the miner,
the assistance in their power to defeat the
county is depending chiefly upon the miner,
therefore be it.

Acadolach, That the miners of Mevada City
solicit the aid and sympathies of the citizans of
this city, and we respectfully invite all, espescal and we respectfully invite all, espescal and we respectfully invite all, espetit day's wages for a fair day's work or
fair day's wages for a fair day's work or
fair day's mages for a fair day's work or
fair day's mages for a fair day's work or
fair day's mages for a fair day's work or
fair day's mages for a fair day's work or
fair day's mages for a fair day's work or
fair day's mages for a fair day's work or
fair day's manners, to show the same
and to the secretary of the Miners' Union with
name attached, Postoffice box or place to
attach hereafter
JOHN TOWARD, Pres. pro tem.
STEEL BRIDGES,—The great number of soci-

dense which here by the break dense with the break dense which have occurred of late by the break dense which have occurred of late by the broad and the down of railroad bridges, both of wood and tron, seems to have greatly as of after bridges. The new bridge at La Salle station, two miles from Misgrar Falls, is build steffingly of the new bridge at La Salle station, two miles from Misgrar Falls, is build seem they of the seams grant here any bridge is 33 per cent heavier than an experiment one of the same grant non one of the same grant would be, as iron bridge are ensually constructed. As the strongth of steel is usually constructed. As the strongth of steel is usually constructed to be 15 per cent are all the strong of the same grant world be seen greater in this this work of the strong of the strong of the strong of strength of iron, there is a strength of iron, strength is now after one of the same dimensions

Ove Frience can do much is aid of our paper and the cause of practical knowledge and science, by assisting Agente in fear tabors of carvassing, by lending their induces and encouraging favors. We intend to send non-but worthy men.

Aswa Ordy men.

Jakap C. Hoke-California.

G. W. Hokakus—Arisona.

G. W. Jisakus—Arisona.

Whichan Pool—Fresno Co.

Whichan Pool—Fresno Co.

E. P. Shurh—Washir ghon Ter.

E. P. Shurh—Washir ghon Ter.

F. B. Losaku—San Mateo and Statislaus Co.

A. F. Jisakus—San Mateo and Statislaus Co.

R. B. Losaku—San Mateo and Sauta Cruz Co.'s

R. B. Losaku—San Mateo and Sauta Co.'s

H. Stakuska Aswa Wataka Co.

E. Whichans—Yuba Co.

E. Whichans—Yuba Co.

J. W. Ranasa—Yuba Co.

J. W. Ranasa—Yuba Co.'s.

Ocience Acas gives warning against the so-called Science Acas gives warning against the so-called galvanized-iron lemon-squeezers. The iron is coasted with zinc, and the 'circle said of the lemon will readily dissolve the zinc, forming unwholesome and poisonous salts. Lemonwall readily dissolve we have observed, where the surfaces brought in contact with the wood, or better, like some we have observed, where the surfaces brought in contact with the readily attacked by the weatest acids, and no article of tood or drink should ever be allowed article of tood or drink should ever be allowed to come in contact with it."

## Don't Fail to Write.

Should this paper be received by any subscriber whe The miners and business men of all mining a does not wach it, or should this party such that the first of the state of stop it, we will but too often the latter are indifferent and postal card (costing one cant only) will suffice. We will not too often the statute of or soon of the paper to any one who does not not have a latter and the paper to any one who does not not have a latter and the statute of statute

## The Arizona Gold Mine.

ure the yield of a whole vein on the basis stamps, the rock does not now sversge much over \$6 to \$7 per ton. So it will not do to figmine is still ranning and paying, working 80 rock came from the surface of this mine, one of the largest nurgets ever found here having been picked up in the canyon. But though the Buttes of California. It is true some very rich is richer than any he ever saw, mentioning at the same time, as a means of comparison, sev-eral other mines which have produced rich rock. Among them he refers to the Sierra should be reserved to pay the national debt. The Prescott Courier speaks of the new mines in glowing terms, and the editor says the rock there was some idea in Congress that the mines has been applied to many other mines which showed rich surface ore. It may be remembered that when California was first discovered torial and Mational debts is not a new one, as it however, of this being a very rich mine, though the idea of its being able to pay Terrifor the whole ore body. There is little doubt, rich gold rock are so very deceptive when se a basis afraid to repeat, more especially as assays of been made, and the assay values quoted we are Two men have pounded out several thousand dollars in gold in a few days. Wonderful estimates of the mine have The richest gold quartz ever found in Arianos and Englands for a discovered in the formation of the season of the season of the formation of t

sincerely hope the new ledge will turn out all that is expected, and that more of a similar character will be found in the violatity.

The ledge is from 8 to 78 more and 25 m mine is found to pay best in the long run. We so very large and lasting. Miners in these days rather prefer a good ledge of regular rock without much "specimen ore." This kind of pocket, such as we have had many instances of in this State. These pockets and chimneys are good, but in gold-mines they are not generally and "paying Mational debt" are rather caloulated to impress mining men unfavorably than the other way. It looks too much like a Arizina in any way. But statements about "many tons of rock worth \$75,000 per ton," rich croppings. This is not said to belittle the new find in

count or depression in price of product. rather than silver, copper or lead. They get what the gold is worth, and suffer from no dissibilities there, and miners are looking for gold settract more attention to the gold-mining pos mate to the ledge already discovered. Whether the rich pocket holds out well or not, the dis-covery is a good thing for Arizona, as it will region very thoroughly to try and find the presents every appearance of continuing. Good offers for the property have already been refused. Of course prospectors will scour that

## Encouragement to Mining.

works. Both these things have stimulated prospecting and development work among the guilqmas to tnemdsildstee edt bna beorlier boring sections is owing to the advent of the ments in gold and silver ores near Prescott, on Lynch creek, Big Bug and Hassayampa creeks, They agree that the activity in all the neigh-The Arizona mining community seems to have become "enthused" over recent develop-

ing matters in a general way. Mot only are new mines being found, but very large ship-ments of ores are being made to the smelters in meeting, the dovernor of the Territory pre-siding, and discussed the project of taking united action to further develop the mineral resources of the region. A committee was appointed to examine into the subject of min-appointed to examine into the subject of min-The business men of Prescott have held a

works, mills and smelters, and the introduction of capital. The mere passing of resolutions, however, amounts to nothing. Active assistance Colorado and Mew Mexico.

The example of these business men is one that might be followed elsewhere.

Their assistance amplitudes but in the endishment of sampling

and support is necessary.

The miners and business men of all mining



## ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Tramcars, Elevators, Signals and all kinds of Electrical Systems for lighting and ismission of power, either direct or with eterage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

## EDISON INCANDESCENT LIGHT,

The only complete and satisfactory incandescent system. Lights require no attention and are under complete one the configuration in the distribution of the configuration of the

## Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.



Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agency. We have able and trustworthy Associates and Agency and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The other advantages far beyond those which can be offered home inventors by other agencies. The cornication social strength in the part of determining the patents the frequent expense of determining the patentathity of inventions thought before us, enables us often to give advice which will save invantors the examination of Patent's already granted, for the purpose of determining the patentality of inventions which are not new. Circulars of advice sent free on receipt of postage, Address DEWEY & CO., Patent Agents, 252 Market St., S. F., A., DEWEY.

## Ores, Mining, and Commission, HORACE D. RANLETT,

420 Montgomery St., S. F.

UNION COPPER MINE, Calaveras Go., NEWTON COPPER MINE, Amador Co. Correspondent as Agent for Empirers in London, Liverpool, New Tork, Boston and Ballimore.

Twenty years experience, in California, purchasing Ores and deshing in Mines.

Special attention given to management and sales of mines and purchase and shipment of copper produce.

QUARTZ MINES FOR SALE.

## LITTLE CAPITAL. A VERY GOOD PROSPECT FOR

WIME IN ET DORVDO COUNTY.

Has Hrz-class holsting works, exapble of stainfully 100 (set. Shaft stready down 300 jeet and tunnels searbted. Little more expiral required for further development. Fravorable strang-monits for an interest can be made and tull particulars given by

ISEAEL W. KNOX, At Golden State and Miners' Iron Works, S37 First Street, S. F.

## SPECIAL MEETING.

ing Company. South Comstock Consolidated Silver Min-

A special meeting of the Stockholders of the South Jomacock Consolidated Silver Mining Company, Mo. 369 California, tield at the office of the Company, Mo. 369 California, or the Company, Mo. 369 California, on Mondey, M., Lor the purpose of the they fare to conselectation the respital stock belonging to the capital stock belonging to the capital stock belonging to the capital stock of the Pressident.

F. M. By order of the Pressident.

San Francisco, Nov. 4, 1887.

BY C. H. AARON, Books on Assaying.

PART I.-Gold and Silver Ores.-Price \$1.

## Table of Contents:

.III GNA II STRAY

## Price \$1.75. Lead, Copper, Tin, Mercury, etc.

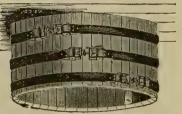
Table of Contents: the contents of the content

## ASSESSMENT NOTICE,

# Nevada City Electric Light and Motor

San Francisco, California Location of works, Mark output, California, Vandrouniu, Vandroun

# Mining Vats and Tanks.



## PRECIPITATING VATS, LEACHING VATS with FALSE BOTTOMS.

SOLUTION and WATER TANKS

San Francisco Mechanics Mills MELLS, RUSSELL & CO.,

🗪 20 Fourth St., Pioneer Building, JOHN T. SULLIVAN,

Boot and Shoe Maker.

Maker of the famous Miners' Shoe.

Goods sent by mail or express.

## Practical Treatise on Hydraulic Mining.

This new and importent book is on the use and con-struction of Ditobes, Flumes, Dams, Pipes, Flow of Water on Heavy Jetaeles, meditods of mining halthow and deep glod weaking, mechanical appliances, such as nozoris of mitty-gradys, rockers, undercursone, etc.; leas describes methods of blesting; is minels and strices; fathings and lump; duty of miners inch, etc. A very practicel work for gold miners and users of water. Price, \$6, post-paid. for gold miners and users of water.

BALLI'S BUSINESS COLLEGE, Set B. B. F. Send for Curales.

Sportpand, Typewriting, Penmanship, Bookkeeping

# List of U. S. Patents for Pacific Coast

Reported by Dewey & Co., Ploneer Patent Solicitors for Pacific States.

FOR WEEK ENDING NOVEMBER 15, 1887.

373.362.—Рілио Wrest-Plank—Thomas M.

373,421.—THROW-OFF FOR PRINTING PRESERS
373,106.—CABLE RAILWAY GRIP—Henry R.
Taylor, Oakland, Cal.

Norm.—Copies of U. S. and Foreign Patents formined by Dwwar & Co., in the shortest into possible (by mall or selectable). Annerican and Foreign patents or selectable and remember and provided provided for the contract of t

## Notices of Recent Patents.

morthy of special mention: Dewey & Co.'s Solevativio Press U. S. and Foreign Patent Agency, the following are Among the patents recently obtained through

1887. This is a compound for the purpose of destroying insect scale and other pests, which infect trees, shrubs, plants, flowers, etc. It is composed of several substances in stated pro-Tulare Co. No. 373,396. Dated Mov. 15, INSECTICIDE. - Adam Fullwiler, Tule River,

S. F. No. 373,262. Dated Nov. 15, 1887.

This improvement in pianos consists of a novel, descabelby, sectional wrest-plant. Instead of main frame, it is formed in sections which are bevariable then the other the upper surface is smaller than the lower one. The main frame of the piano, which is made of iron, has openeded all the piano, which is made of iron, has opensetions, so that the sections can be introduced from below, and when they are in place, their face of the main portion, which has been been been and projecting below the main portion, which has the usual agrate. To secure the sections in place, their ing holes are made through the plate and as an are along the usual projecting below the main plate. Corresponding to leave the interpretation of the usual mage to receive bolts by which they are firmly the plate and together. This construction admits of the removal and replacement of the wrest plank sections independently of each other and plank sections independently of each other and also of the main frame. Piano Werst-Plank,—Thos. M. Antisell, F. No. 373,262. Dated Nov. 15, 1887.

## Mining Share Market.

.eman nism edt to oala

wills will be at work on ore from the Comstock. The mills of the Con. California and
up, and some 800 tone as day will be milled
from the mine. Last week the mine stripped
from the mine. Last week the mine stripped
from the mine, Last week the mine stopped
Eureka, and 1014 tons to the California mill.
The average assay value of this ore was \$3345.
Tellow Jacket shipped last week to mill 2500
ore from the Potosi in a day or two. Occidentore from the Potosi in a day or two. Occidentmill is running on Sayage bullion. In Thecatair of tons a day or two. Occidentrora district matters are looking well. The
say, making voor \$80,000 tor the month. But
it is to the Cometock that stock dealers look
it is to the Cometock that stock dealers look
of any principle affecting the general market. A
riph strike in any of the mine and the color
again make a lively market.
A principle of the mine of the color
again make a lively market.
A saying market lively market. now pretty good. In a very short time all the mills will be at work on ore from the Com-The outlook for the stock market seems to be

## Bullion Shipments,

We quote shipments since our last, and shall

We quote shipments since our last, and shall lale by quote surface our last, and the quote spleased to receive further reports:

\$85,000; Cons. California and Virginia, 16, \$42,.
747; Polaris, 19, \$3630; Plutus (for October), \$9581; Pollock, 19, \$8144; Laxington, 19, \$19, \$28; Pollock, 19, \$184, \$184, \$19, \$28; Pollock, 19, \$184, \$184, \$185, \$184

Analytical & Consulting Chemist, W, T, WENZELL,

L Mew 1.S.-inch, 35 H. P. Engine.

VERY CHEAP. Apply
130 Sansome St., room 12.

FOR SALE.

For Sale by all druggists.

H.H.H. HORSE LINIMENT

Partiamph Concentrators

Opplate Securified Strands of the Color of t

CYTILOBRIY WACHINE WORKS

THE HISTORY OF THE PARTY OF THE

Solden State & Miners from Works,

oddae'd don spooned day'd romaelanaid eres decores planed as edold is to

LAURITHE LANDSHITTLER

Mode-Board Amalgamators,

Eniden Stade Pressure Blowers,

THOMSEON BROTHERS, Plus Di., Delwent Edward & Folsom, S

Le , houverte dans andere answered , the closel little dans & EUREKA FOUNDRY

TERRESAL LASERED TO SESTIMATE

MINING ENGINEERS

DESCRIPTION OF DEBUTE SMITH series British the 1770 W. A. GOODTELE,

ECER E BEOMNE'

THE SECTION OF THE SECTION OF THE PARTY. Mining and Hydrsulic Regineer.

N. W. SPAULDING

K Elianesminismi SAW COMPANY

SPACIOUS'S

danei bettetal

CHISEF BIL

WINDSHIP

SWES.

LEENIEDTH CHT BTIM MTS



TILE BEWENER

SHIPPING AND COMMISSION MERCHANTS. NEWHAL

Agents for Grower and Ill Erisman Street, Err Francisco, Cell.
Agents for Grower and Manufacturan. Concrement for all leades. Agents
for the Mexican Phosphate and Eulpiur Company's Francisco.
General Insurance Agents.

General Agente for the Fernic Coest of MATICIALL ESSUEAMED OO., of Desirol Mater ATLES ASSUEALCE OO., of Loudon: SUFLICTON INSTERACT OO. of Sestion Mater

PACIFIC ROLLING MILL CO.

THESERM BRI GOO'GE OF TU

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES. CAMS. TAPPETS. PISTON-HEADS. RAILROAD and MA-

SOFT and DUCTILE

LOCOMOTIVE AND MARINE FORGINGS,

PACIFIC RULLING MILL CO., 202 Market 31., San Francisco

HINCELEY, SPIERS & HATES, Proprietora.

BAR Prancisco

ministry angle-mag in three REPLICE CAT REALISME EVILLAM

MINIST MY CHICKEL - However Souther and

Tustin's Pulverizer

MORKS ORE MET OR DRY,

Water Fipe, Franç or Air Columne, Finh Taiks for Salmon Cameries

THE THE MENTS STREET THE PLANT HAVE

Desne Steam Pump,

years and Marriaderrais of the Lucian and a second from First Structure Confidence and Author (see Full-sourcement)

Lucation of Mortes, Potrera. P. O. Box 2128.

SIEAM, AIK, AND HYDRAULIC MACHINERY.

Pump Agents of the Cameron Steam

HOME PRIMARY THE MORE LEADED WAY CHINEVALLED

Tour Delices.

Lendreduce Fans.

Edda Housen. "SEGRECAS

HANDOND CONDENDES ENCIRES.

CHEAPERT AND BEST IN USE. THY OUR MAKE

non-sents to PRESUDIT, SUSTAIN & UD.

UNION IRON WORKS,

omo dense a single belief (18 200) on the self of the

C. A. STETEFELDT, Premdent.

THE RUSSELL PROCESS COMPY

NEW YORK OFFICE, 12 SECLUMEN



Electric Relivers, and Apparetus for the Blectric Presemission of Power,

Keith's Electric Dynamos

N.S. KEITH

Orders promptly attended to

PERFORATED SHEET METAL

BATTERY SCREENS.

GREAT REDUCTION! LAD GOSIONAST WAS 8 California St., and 21 Fremont St.

PARKE & LACY,

INCERSOLL BOCK DRILL CO.,

Tos Catalogues, Estimates, Idc. address:

LHIED EDILION NOM REVDI.

Section 16x16 feet; Length 36 miles.

NEM LOBK VED REFE DESCRIPTION OF THE MILH WARP, ILLUSTRATIONS

Engineers' Tables of Progress

TUNNELINE, SHAFT-SINKINE, ETC.

and others interested in

ENGINEERS, CONTRACTORS

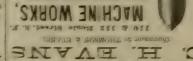
WINING WEN

NOTICE TO

San Francisco Pioneer Screen Works.

grammes and Motors of all sizes for Conveying. Fow waterfalls for use in Mines and Mills, systefed und crant, of percompuse.

Office 40 Neveds Slock.





PORTLAND, OREGON,

SAN FRANCISCO, OAL,

BALT LAKE OITY, UTAH,



Machinery

and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

Mining Machinery, Steam Pumps, Wood and Iron Working

ENGINES and BOILERS.

SOILER. NOTJEZA

A NEW AND RADICAL DEPARTURE IN

PLR CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. DESTINED TO REVOLUTIONIZE ALL FORMER METHODS. A SAVING IN FUEL OF AT LEAST 25

Spring Valley Water Works, S. F. I. 75 H. P. Selby Smelting Works, Valle, Order, Order The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

PULVERIZER

PACIFIC IRON WORKS,

MACHINERY

THE PART OF STATE OF STATES OF STATE

PNEUMATIC

POWERFUL OPPOSING CURRENTS

including a Sectional Steam Boller supplying all the power required. 10 TO 200 TONS PER DAY,

PNEUMATIC PULVERIZER COMPANY,

2 and 4 Stone Street, NEW YORK,

K V PROKRARVCH' Sabje P. K HOLMYA' Beske

No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.

("DYNAMITE" or "GIANT") NILHO CIL ACERINE

Blasting Powders.

Vigorit "LOW" Powder,

FOR REMOVING STUMPS AND THEES.

HAS NO EQUAL.

ED. G. LUKENS, Manager. WORKS: California City, Marin Co., Cal.

MACHINERY WINING

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc. SLEVM ENCINES'

GENERAL MACHINE WORK,

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco.

CHILLED CAR MHEELS

AND RAILROAD CASTINGS. IRON CASTINGS of all descriptions.

AWARDED, MECHANICS' FAIR.

oss. STEICHA & KERR, 34. Occidental Francisco, Cal.

A SPECIALTY.

Machinery, Models and Buildings nstantly on hand a full assertiment of Manile Rope, Ref. Sen Francisco Views Of View

Mechanical Photographers,

RUNNELS & STATELER,

43 DEL ST., NEW YORK.

Clayton Air Compressor Works

San Francisco, Cal.

Best Estanced Pul sy in the World. Also Manufactures of SHAFTING, HANGERS AND APPURTENANCES AND APPURTENANCES

Medart Patent Wronght Rim Palley

First Premium Awarded at Mechanics' Fisir, 1884.

Pirst Premium Awarded at Mechanics' Fisir, 1884.

PERFECT PULL

New Tork.

Liberty St

96

PARKE, LACY & CO., Agents,

and BOILERS, 300 Sizes

LIDGERWOOD MF'G CU

to order on short nor TUBES & CO.

611 and 613 Front St., San Francisco.

Established 1856.

San Francisco Cordage Factory.

Nos. 129 & 181 Fremont Street.

THE FRUE

(\$275.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

THE MONTANA COMPANY (Limited), LONDON, October S, 1885.

Having tested three of your Frue Yannes in a competitive trial with other similar machine satisfied ourselves of the superiority of your Vanners, as its evidenced by the fact of our han one of your machines for immediate delivery. Yours truly, OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The wear and are make tests at \$20 Fremont are merely nominal. A machine can be seen in working order and ready to make tests at \$20 Fremont

was written the 20 Vanners having deen started gave such satisfaction that 44 a prachesed, THE MOUTENA COMPANY (Limited).

Protected by patente May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 28, 1881; Febru-ary 20, 1888; September 18, 1883. Patents applied for.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

R. S. MOORE, Superintendent.

Room 7, No. 109 California Street,

WM. H. TAYLOR, President. OR VANNING MACHINE,

ORE

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

SAFETY, Manufacturers and Sole Agents for the Pacific Coast for

CONCENTRATOR

**BOILER. MATER TUBE** HEINE SAFETY

OE Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Works Hueter Bros. & Co., California Jute Mills, and other places.

SHECTION

REFRIGERATING MACHINERY for Steamships, Erewerles, and Cellers.

\*\*\* Builders of 120-stemp Gold Mill for the Alaska Mill and Mining Company; 60-stamp Mill for Quartz Mountain Mining Company. STEAMSHIFS—Steam Zachts, Marine Engines and Boilers, Screw Propellers, Centrifugal Pumps, Steamship Pumps, Steam Capetans, Cargo Winches, etc. WILSON'S PATENT GAS-PRODUCER.
SUGAR MACHINERY—Sugar Mills, Vacuum Pa

OURTIZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Rossting Furnaces of all kinds.

AIR COMPRESCORE—Good Fover Transmission.

AIR COMPRESCORE—Good Fover Transmission.

WEDDAGLIC FURITIES And Holding Machinety.

WEDDAGLIC FURITIES FIFE a Specialty. More.—Have just completed order for 35 miles of pipe Col spring Fibelly Wheter Works Company, San Francisco.

SARW-MILL MACHINERS FOR Solver Former Solver Company, San Francisco.

SARW-MILL MACHINERS for Pacific Coast of the Colebrated "Heine" Partent Salety Boiler (Water Solver Machine Fibelly Solver for Machine Fibelly Machine Fibelly Solver for Machine Fibelly Machine Fibelly Solver for Machine Fibelly Machine F mpleted order for 35 miles of 44-inch

WATER pur

RIX & FIRTH, 225 and 227 First St., San Francisco.

SINGLE OR DUPLEX, STEAM OR BELT POWER. 69 Sold on the Pacific Coast. NATIONAL AIR COMPRESSORS.

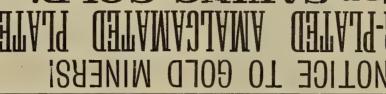
WINEBS, HOBSE MHIW

KNICHT'S WATER

MILLS, PUMPING AND HOISTING.

Over 300 in use. All estimates gnar-anteed, Send for Circular.





IN QUARTZ, GRAVEL, OR PLACER MINES. FOL

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER

FURNISHED ON APPLICATION, GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

NO. 108 FIRST STREET. SAN FRANCISCO NOVELTY AND PLATING WORKS

Mills

оке скознек

HADEO-CYBBON VERVA EURNACES Agent for HOSKINS'

BATTERY SCREEUS AND WIRE CLOTH

Assayers' and Mining Material.

521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

MOTICE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are tested be-tore leaving our works, bereap, avoiding the complaints about light weight, made so often before we started in this branch of industry.

NATIONAL ROCK DRILL.

ECONOMA

SAN FRANCISCO, CAL.

L. R. MEAD, Secretary.

in this branch of industry.

All wrought from. No gears, no breakage, 200 Sold on this Coast. Has One horse, will easily lands rock or water to a depth 200 Sold on this Coast. Price, complete, \$200. 150 sold on this Coast.

Guaranteed More Efficient than any other Boiler made.

. өзи пі wоп төмот өзгоН 000;08

AND FACILITY OF INSPECTION and REPAIRS,

DURABILITY,

Has the Following Advantages:

MANUFACTURER OF F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS, Legutiringal Zlien? Roller

steam Engines and Shingle Machines. Mining Machinery of Every Description,

SAN FRANCISCO, CAL,

No. 45 FREMONT STREET, ..



Mumber 23. Illustrated Journal of Mining, Popular Science and General News,

may be connected to the rod.

into an apper and lower chamber. The plun-

for a patent through the Mining And Scien-

SAN FRANCISCO, SATURDAY, DECEMBER 3, 1887.

.qmpq bevorqml nA BY DEWRY & CO.

A New Form of Blast Furnace.

Biggs

given the "lines" to seenre constant delivery. the shortness of the bosh, and the direction of the furnace is not too seriously curtailed by short bosh, and provided the cabical capacity well, provided the fuel is not ornshed on the like bases and astrow hearths: and he will work most likely conclude that the funace will work this zone, as in the older practice, employing cice, with the use of steep boshes and wide holor brown distribution is it removed horizontally beyond -parq maebom ni as Agid oot ton ai ti rol .eosn will also indicate to bim that the top of the rore or the furvere, on examination of the design, that unit form and regular delivery of the solids will be secured to the top of the bosh; his experience perienced furnaceman will immediately perfrom Mr. Walsh's paper, recently quoted in the Press, on the subject of the "Irregularities of the Blast Furnace," An ex-We give on this page a new design for a blast furnace on a scale of one-sixteenth of an inoh to one foot. It is taken

viz., 30.71 pounds per square inch, will be the eidered normal); at any rate, the last-mentioned, Type of life bath of the first state of the solution of the diametric for a first state of the solution of the ternal and 10 feet internal diameter, the prespounds per square inch; or, if the boshes are thought to be an annular ring of 16 feet ex-80.22 ed Iliw nierte ett inoiteeteng letnoziron ni ward on the hearth and boshes as they appear ward on the bearth and bearth and the second and the same and a second and the same and a second and the second the materials contained, will give a total weight to earlaces of the bosh and the port the surfaces of the bosh of (a mawolfs laredil a) toot req abmuoq IV ta simple statement of the actual strains to which the fuel will be subjected. The furnace from the tuyeres up will contain 7631 cubic feet, which, a yd tem ylisae ed nae neiteejde tana edT '' Mr. Walsh says:

si exis sid to so a run a for this size is size is sees of the special and sees of the size of 'It will be readily conceded that the fuel maximum strain that can be exerted by the solids in a furnace of this design.

is factorily, it will be necessary to call attention age, to a well-known law of physics, and to its practical application in the materials to be treated in the shaft of the blast furnace. In the selection of iron-ores to be used, preference as election of iron-ores to be used, preference and the selection of iron-ores is always sixen the constitution of the selection of iron-ores is always sixen the constitution of the selection of the selecti .no rder to answer the second objection satthe maximum, without the slightest deteriora-

porous or open-grained ores, as they are said to work free in the furnace, while it is known that they require less fuel for smelting. ot nevig syswis si (laupe gaied sgaidt redto)

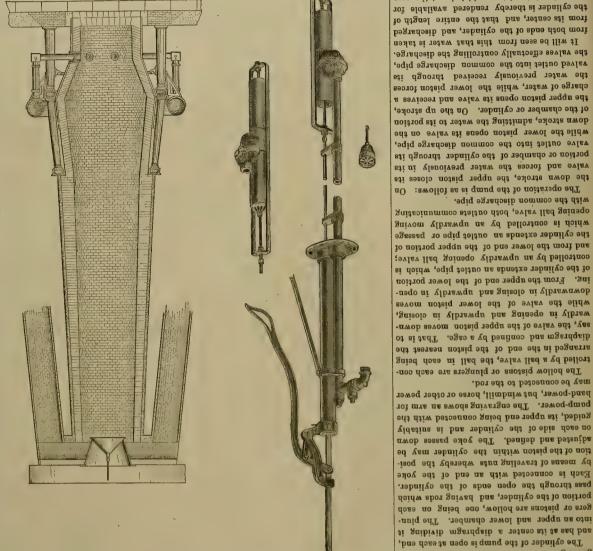
the ores will apply. heat, the reducing influences and to the action of carbon impregnation, the law for capillary transpiration of the gases through the porce of so very soon afterward, when subjected to the · As the iron-ores are either porous when first introduced into the furnace, or at least become

lipsburg, M. T., will ereck next year an 80-stamp mill, and then, it is olaimed, the month-ly dividend paid will be \$400,000. 000 tons of lead ore in sight on the surface of the Gilchrist mining district near that city. THE Cheyenne Sun claims there are 10,000,-THE Granite Mountain Mining Co. of Phil-

TESTS FOR STEEL.—A Washington dispatch Anoremen and part the Steel Board met at the May the Spring Valley Co. of Butte county to en-

Keppel and others. The farmers about

offerst Pares Patent Agency on a simple and effective form of double-acting deep-well force of the pump, which is shown in the accompanying onfrom department officers looking to a modifica- olaim that the company's canal has not suffi-tion of the tests now prescribed for steel. After cient capacity to prevent the slickens from bas, saiblind won eraisers now building, and Department, and considered certain proposi- join the company from running slickens from tions comfractors for supplying its mine at Oherokee over the land of Carret. Peter Mesick of Alameda has recently applied



DESIGN FOR BLAST FURNACE.

aging the property. overflowing on lands along the canal and dam-

down of the mines in those districts. invest money in mines of that section. Poor management has been the cause of the closing county, Nev., and it would pay capitalists to A UUMER of obloriders are at work in some of the mining districts of Western Mye. Rich ore is known to exist in that portion of Mye ore is known to exist in that portion of Mye

There are 16 Frue concentrators at the mill. phis Smelting Co., at Smoky, Idaho, is com-pleted. The full capacity is 400 tons per day. THE Silver Star mill, owned by the Philadel-

some discussion, the requirements were smend-

than harder material. crank shafts upon the suggestion of the manu-facturers that it will prove more serviceable veiginally required will be accepted for heavy of the objects sought by the steel-makers. A milder and softer grade of metal than was reduction of the number of tests, which is one than that used at present, but will result in a it is said, will not admit steel of a lower quality ed in several particulars. The modifications,

in the Bank of England. the United States treasury, \$237,000.000 in the Mational bank of France, \$107,000,000 in the Mational bank of Germany, and \$100,000,000 masses of gold in the world: \$282,000,000 in GOLD,-There are four great accumulated

the cylinder ie not available. In this pump of Mesick's, however, the discharge being from the can be and the motion from each side. yoke, and therefore that much of the length of the connecting pine pass to the yoke, which is ing at the center of the cylinder through which plungers. In such case there must be an openof the cylinder and the yoke connects with the two out ent entity dink bor notes of the two center of the partners of the part the stroke of the pistons, which is not the center in pumps in which the opening is at the center MESICK'S IMPROVED PUMP.

DIMICE & LUSE are shipping good ore from Tybe to Eareks, for reduction. there is no waste in this respect. By using this pump, water can be forced in any desired direction without the use of any stuffing-boxes.

THE smelter at El Paso proposes to make

brick of slag.

# produced a feeling of diszinses. One experibe was noverpowering separation that caused him to touch his eyes to convince himself that he was not blind. Silent, full of mysteries and of an imposing grandeur, the spirit was oppreseed by such everlasting night. I drew out an old copper watch and saw that it was now five o'clock. We had been walking three hours and had used up six candles—that is, three by sach of us. "Give me another eandle," I said to Manel, as mine was shout burned out. This he did, at the same time incilining his ear, which in him denoted a strong preserved. black abyem had a fasoinating attraction which produced a feeling of dizziness. One experi-The Mines and Miners.

BY PEDRO CASTERA.

Translated for the Paggs from Et Minero Mexicano by

I was returning from the mining town of the flow of the flow of the flow of the flow fown of the mining town of the flow flow fever, as the natives of Culzio classify it, which detained me in that little bubblo, for my good fortine, was a runnbeador of the hones in which I here flow of the hones in whom the flow of the hones in the flow of the hones in the flow of (Continued from our tast.)

"(What kind of a thing is that, hombre?"
"Yos, sinor, a cave," "Grande?" "Yoty
"Yos, sinor, a cave," "Grande?" "Yoty
"Gueno, get well and I will take you to it."
"Gueno, get well and I will take you to it."
"Yourn, get well and I will take you to it."
"Yourn, get well and I will take you to the conversation, I found wayest which Manuel, opposite
the entrance of the cave, formed by an arch of
dark-brown rocks. "A handfull," he replied.
We penetraked the obscurity as far as possihim and the other for me—we proceeded in the
midst of profound darkness and of clouds of
min and the other for me—we proceeded in the
midst of profound darkness and of clouds of
the calculation of the same," "Bo one i' murmured
Manuel, making the sign of the cross. "For
what, hombre?" "Because the bats are chilter latkre around us. "Because the bats are chilter latkre around us. "Because the bats are chilton of the bad one." "Of who?" "Pos of
dren of the bad one." "Of who?" "Pos of
move as if wounded by our lights. The ground
and sonoth, making the sarkh, amouth, making
taste, fresh and hot, I knew that it was nitrous
and of the color of coffee. By its piquant
taste, fresh and hot, I knew that it was nitrous
and of the color of coffee. By its piquant
taste, fresh and hot, I knew that it was nitrous
and of the color of coffee. By its piquant
taste, fresh and hot, I knew, it was nitrous
taste, it as an immense longitudinal hole of
balout, "khat earth has powder." I smilled at
hour, "khat earth has powder." I smilled at
belout. It was an immense longitudinal hole of
color of white sizing, which indicated the calcareous formation of the hill. In proportion as
are penetrated.

The Three Dimensions were refere-

"The Cueva del Oristo."

The Three Dimensions Were Enlarging

For about an hour Manuel had been trying to tracks, but at a short distance he lost them and tracke, but at a short distance he lost them and was obliged to stop. Hunger and thirst, excited was obliged to stop. Hunger and thirst, excited The hours were slowly slipping by. The darkness to could not be more dense. The solemn silence shriet of some bat, that with its hong wings was somethings but the that disagreeable the immense tomb, as Victor Hugo would the immense tomb, as Victor Hugo would the immense tomp, as victor Hugo would the immense tomp, as Victor Hugo would the immense tomp, as levent mournful monor, water continued salling with mournful monor, of the superiority shat third in the serent manner; step by sele, but solemn, seerent manner; step by sele, but solemn, seerent manner; step by sele, the solemn, late abyes which had devent in a was in this enormous crypt. Sunister concess, was in this enormous crypt. Sunister concest and in the sund placid brow, has I know not what of sign of the abyes which had elected me for anything. I was something. Manuelolem of a gant, in the sund of the sund of mournful that abyes which had elected me for its and a sund in the sund of the sund o Seligman, economical in the reduction of sulphides and refractory ores in general, and that the sincky nature of ores does not increase the cost of treatment as it does with lead smelters.

Revival of an Old Mining Camp.

hese sein stirred with such life and vigor during hese seins and the pioneer days of that seethon, the peast few months that brief and vigor during with sheir much larger populations, bayed with months that be bade. The busy with their sears, the wastly loaded with lumber, meaniner, beans, searly loaded with lumber, meaniner, beans, searly loaded with lumber, meaniner, search and the lively reports which his growing camp, have prompted that paper to send a related out can be seld, in order to obtain a relieve samp have prompted that a paper to send a related out can be seld, in order to obtain a relieve samp have, be seld, in order to obtain a relieve camp, large and the field, in order to obtain a relieve samp have be seld at the candon of the candon of the sender of the sender of the sender of the candon of the candon of the candon of the sender of the sender of the candon of the can want of capital and the application of modern and coientific improvements in machinery, was Pine Mountain, an old mining camp, which, for In a southerly direction, 33 miles from the town of Enreka, Nev., and situated at the head of Sammill Canyon, on the west side of White

has been stirred with such life and vigor during neglected in the pioneer days of that section,

As seen from the Pine Mountship, As seen from the head of the canyon, running north and south, rises gradually from its base, but further up the ascent is rugged and steep, towering to a tremendous hight in grandent that can hardly be described. The formation of the canyon is a dyke of porphyty, the footwall the canyon is a dyke of porphyty, the footwall the canyon is a dyke of porphyty, the footwall the canyon is a dyke of porphyty, the footwall the canyon is a dyke of porphyty, the footwall for the mines, which forms one of the spure of the canyon, as well as everything in the canyon, textion, as well as everything in the canyon, whose hear absorbed by Mr. Robinson, whose textion, as well as everything in the canyon, whom mines and mining in Eastern Mevada are taminist than by those who do not understand whom mines and mining in Eastern Mevada are taken in the contraint of the meter and water rights, is obvious to all, as one of the necession, and the spure of securing times to all, as one of the necessary adjuncts to a large mining property.

White Pine Mountain,

The Principal Mines

( To be Continued.)

Developing mines,

The Denver Tvibune-Kepublican says: The Denver Tvibune-Kepublican says: The manager or superintendent of a property in process of transition from a prospect to a mine process of transition from a prospect to a mine property is at a loss which form of a different of greape. It is no easy mach to lay out the developments of an embryotic mine so that every part of the underground work will serve the greatest purpose when the property has eventually been developed, and property has eventually been developed, and still leave it free from seeming unnecessary work and consequent expense. A prospecting still leave it free from seeming unnecessary diff of dimensions that will prove acceptable for a working seems that will prove acceptable for a working seems and observed the same is true of the regularity through. The same is true of the regularity through. The same is true of the regularity ore body opened up in securate, square, or ore body opened up in securate, square, or note body opened up in securate, square, or ore body opened up in securate, square, or tectargular blocks, provided the openings successing and course or elevation of levels. A mine or ore body opened up in securate, square, or tectargular blocks, provided the openings successing in the secures and loss if used to see the orestored in the points, presents a model ore bodies at practical that shows one on all sides, its better than one took.

Took the decision of levels is only the transit and disclosing only barren for the secure of a diording the paretical shows one on all sides, is one only barrent one. In most instance, or one of seed of the seed only barrent one of the seed of the stance of the seed of the stance of the seed of the seed of the seed of the secure of the seed of the seed of the seed of the seed of the secure of the seed of the se

rock.

In most instances, however, a happy medium rock.

In most instances, however, a happy medium should be available, affording the practical grainstaining of an ore body, and still maintaining the firequiarity in the course and elevation of levels. A system of work that will bring within of a mine, and not leave the impression that of a mine, and not leave the impression that the ore bodies and not leave the impression that years, system or regularity. Prettily and adventure and state of comparagness, system or regularity. Prettily and adventure has a system or regularity. Prettily and adventure has a without any distinct and be a wise as ere are. In large papers and the same are the large considered and immession or ore bodies, and as a wise as trace. In large lists are the first and square has to be laid saide and the differ the first diriven to where the ore exists. This is particularly true of mines that is asside and the dirits diriven to where the ore exists. This is particularly true of mines that saide and the dirits diriven to most one except of the only limit that can discuss the should always be large enough to allow a miner ample room to work treely. A man cannot work accomined to the early diritous work accessfully in a cramped position, without room to swing hammer or pick, and a most work accessfully in a cramped position, as a miserable little hole that has bas to be entered the original pays he is a miserable little in the degraded manner of a same a miserable little in the degraded manner of a sure of the contered as a miserable little in the degraded meaner of a series as miserable little in the degraded meaner of a series of the original as a miserable little in the degraded meaner of a series of the original as a miserable little in the degraded meaner of a series of the original and a series of the original and a series of the original and as a miserable little with the series of the original as a miserable little with the series of the original and a series of the original and a serie

the continued of white the series of deficiency in the series of the ser

interent by the monotonous and of stated the increased and the most of the drops of water and the stated in the drops of water and the stated and the action of the Bate.

Sintates the state of the state of the states of the st

The canelle water the caree, ve week watering switch. The cave, to me, appeared to be endless, dismal and horrible. The cave, to me, appeared to be endless, dismal and horrible. The cave, to a speaked to be endless, dismal and horrible as the deader. If he can lead to be ender he and in the mean time was diminishing. If do not here, "We onght to be near the door," said here," In fact the loathsome vespertillos were germinating. So little was now left to the can germinating. So little was now left to the can germinating. So little was now left to the can germinating. So little was now left to the can germinating. So little was now left to the can little was now left to the can letter, the dame died out. I drew forth some wax tapers, and holding one, and the can letter the can letter the same of the same dead out. I have the same to the same of the last nesource for salvation. With the expanse of getting out vanished, and with the expanse of the from fatigue. "I am the midst of a supple of the order of the midst of the say it without a light, it was not from the fatigue." I said in a be midst of the most one that the same and the significant of terror; but in the standard the saying a seison of terror; but in that night of darkness, estion of terror; but in that night of darkness, estion of terror; but in that night of darkness, estion of terror; but in the same and measured nies of the doors of water and the secured of the doors of water and the secured of the stage of the monotone and measured and searced and the searced and searced and searced and searced and searced aneaded and searced and searced and searced and searced and searced

A cold swest broke from the roots of my holds of my holds of my bair. To retrace the passage in which three candles had been expended, with only one, was more than difficult; it was almost impossible.

"You told me you brought a handful I Un youro sox sistes, shor amo." [A handful I Un seven, massler, shor und." [A handful I mure even, massler, shor moi, "A honght of the voice, and suiting the action to the word mine; then in a high voice, and suiting the action to the word mine in the word; "Backward, backward; and in a hurry, or we shall be buried alive; "I began to go back the same way rapidly. Manuel followed me, saying: "I was the store way rapidly. Manuel followed me, saying: "I was the sir should not consume it so the soot back the same of the candle with my hand so that the sir should not consume it so quicking the fash of the dame of the candle with my hand discouraing nor meditating. It was not discouraing nor meditating. It was earning me to hasten on. To get out, to discouraing nor meditating. It was to the soil by our steps, I was not the sair should make in the soil by our seley. It was the opposes of the conty idea, To get out, to was causing me to have to lay, that hind me with a struction on. To get out, to breach on the with a struction of the orderine was walking to use yearding in order not to be detained a single garding. We were well and the with a struction of the detained a single sarding. In order not to be detained a single in the sulfar was diare-walking her was diare-walking her walking gailing swiftly.

But with days of the sulfar the consume of the sulfar the consume of the sulfar and the sulfar and order and longer the consumer. We were sulfar and order and to be detained a single of the contrance all O be detained a single order walking and of the sulfar and order and was diare-walking and O be detained a single order walking all O be detained as single and the sulfar and the

".omA tonic ,asst, ent stat."

But with Equal Celerity

The Three Dimensions Were Enlictging was penetrated, were visible. Again we stopped in an estonishing manner, and an hour afterward distinct the root nor the walls of the care were visible. Again we stopped in an ocean of darkness. "What are you doing?" I saked darkness. "What are you doing?" I saked Mannel, seeing him unloses a cord and take out the sling to get the size of it." Turning his right a little stone from his pures. "I am going his gives the sling to get the size of it." Turning his right the sling the stone, which went whizzing in a direction almost vertical. I listened attentively, but did not hear the stone strike against the root. Soon atterward it fell near us. The altitude and the stop his stop has a strike and discharged it in a lateral course against the companion has been the stop of the subjustion of darkness that surrounded us. In the meaning we were greated that the sling any shock. This indicated that the dimensions were proceed as the find out the stop of the care any shock. This indicated that the dimensions were introneasing out; we can follow our tracks." And in tact that any shock. This indicated that the dimensions were increasing the equal proportion. Some any shock. This indicated that the dimensions were increasing the equal proportion. Some any shock. This have been very late, because he said. "Here meaning heave on the first another candle," I said, and lighting it, the first another candle," I said, and lighting it, the first trom the root, producing a metallic sound which baying been walking two hours and a half and blorstion? Orbit canded in the department to the caver was falling the exploring a metallic sound which right exploration? Orbit and help with the stand of the cavern. We had been walking two hours and a half a believed to be battled. When the caver was the caye, of the caver was the substance of the caver.

When the contracting the contracting the contracting work. Hew the contracting works will be because the contracting the contr

into it.

The constellation Aquils, or the Eagle, we have next to engage our attention, as it contains a star of the first magnitude, Altair. It is easily found by lining off from Vega tis easily found by lining off from Vega Bradetreer's agent advocates a united etfort, especially on the part of the California, Nevada and Colorado delegations in Congress, to defeat placing lead on the free list. This should be backed by an enormous petition from Utah mining men, and active, energetic lobby work.

capella a holobaran a diobaran and you will strike a beautiful reddish star, aldebara, in the bead of Tarura, or the Bull, the second constellation in the Nodise.

Then look around and a little toward the Conito.

Then look around and a little toward the conit of the second constellation in the Nodish and the Helse the star of the second opera-glass the six or seven stars visible to the naked sy become vot interesting with their almost innumerable companions. This report of the sideres had biblical literature. The Poistade special and biblical literature. The Poistade show become vot interesting with offerest mythology the Pleiades were the seven daughters of Akies and Pleione. Their history varies writing on the A B C of astronomy, not daughwith therent mythologists, and as we are writing on the A B C of astronomy, not dreck into tit. STEAM AND EXHAUST PIPES.—It is recommended that all pipes, steam, exhaust and discharge, be made as straight as possible, but always of ample area. Keep the steam-end well onled. The exhaust should have an area double the steam-pipe. The pump should be firmly secured on a rock or masonay foundation, and mail cases be easily accessible for use. REAL DOLLARS.—Colonel Robert G. Ingersoll says: "I have been told that during the war we had plenty of money. I never saw it. I lived years without seeing a dollar. I saw promises for dollars, but not dollars, and the coin back of it. You cannot make a paper dollar without a dollar worth of paper. We must have the paper dollar worth of paper. We must have paper that represents money. I want it issued by the Covernment, and I want behind every one of these dollars either a gold or silver dollar, so that every greenback under the flag can lift up its lead and awear, 'I know that ny redeement its head and swear, 'I know that my redeement liveth."

to Capella; thence southward so as to form an isosceles triangle (that is, a triangle having two equal sides), with Capella at the apex,

man can bete meet on neutral ground, and both enjoy the beauties and infinities of nature.

Totale, and millions upon millions of precious erais, and millions upon millions of precious meets and millions upon millions of precious activate and millions upon millions of precious exists, and millions upon to the mines by the exists, and millions upon the carty market in the back exists, and million the back of millions the process which a fall railroads are constructed to carry market ill railroads are constructed to early market finds of a man or lians, and the quartz is cruehed by the beach of the Ander is carried on the beach of its way out of the Ander is carried on the beach of its way look of the carry was colling heavy loge upon it. By this method Booto of the Angelia and the state of the beach of the carry to the farther to the distance from July to the late of the carry which, has excited, the content of the carry of the montains of the discust of the carry of the carry of the montains of the discust of the carry of the carry of the carry of the montains of the discust of the carry of the carry of the montains of the discust of the carry of the carry of the montains of the discust of the carry the carry of the montains of the discust of the carry of the carry of the montains of the discust of the carry o With your triangular card in band, line from 8, the lower end of Cassiope

(To use the diagram understandingly, consider it to represent the vault of the sky, not a flat surface; and look was a fit, instead of down upon it. (The center of the circle represents the senith, or point directly overhead.) You may, however, find it more convenient, when looking southward, to hold the diagram upright before you; in looking tor stars westward, hold it with the "E" down.] into them from the tunnor the case and confined the case of the fire of the case of the ca

Southern Horizon Thomalhau. 200 o Menkat DIE DE Aspherale 12Ein 10110 · Betelgena Jolar Dla כסג נניגסן Northern Horixon

Vewmert nori law way was year warm to the way was a more of 3000 feet, by which the original be conveyed from the upper tanner to the ore bins, situated above the original passed that the ore law and the song the song the west tunnel can be run out in care and dumped ower tunnel can be run out it care and dumped into them.

Agwined to the gold concents, which are not asy nothings of the gold concents, the vote the awaitable points by tunnels, the lower one of waitable points by tunnels, the lower one of which has been started immediately above the mill-site. This will cut the vein at about 1000 as depth of about 1700 feet. The upper tunnel and the set to the vein, and tunnel about 1700 feet. The upper tunnel the adopt of about 1700 feet, trom which point as depth of about 1700 feet, trom which principally and a depth of the vein of 160 feet. This tunnel am upraise has been made to the surface, show and is being pushed and the vein the surface of 34 feet, at having been satistated of 34 feet. It having been astistate, and the concentration, a mill is to be set bickness of 3 feet. It having been astistated by concentration, a mill is to be rected, for which the building material is to be set bickness, for which the building material is alteady on the ground, and the machinery is in the set of a set of a set of a set of the machinery is in the set of the set of the set of the surface of 34 feet of order of the machinery is in centrators, only 9 of which will be added mext spring. An entitle the set of the surface of 3000 feet, by with the pullity as the theory of the will be added mext spring. An entitle of the surface of \$3000 feet, by with the pullity of the pullity by with the pullity of the pullity of the well and the pullity of the well and the pullity as the the of \$3000 feet, by with the pullity of the well and the pullity of the well and the pullity of the pullity of the well and the pullity of the well and the pullity of the well and the which a distance of \$3000 feet, by with the pullity of the well and the well and the will be set of \$3000 feet, by with the well and the well and the well and the well and the pullity of the well the well and the

ton east to which some or read, to to the control are not An incident the lead appearing plentiful and rioh. An inciden started as the bound in coline and, the woin there exposed is about sourtheast end, the woin there exposed is about 20 test think, of which eight test are almost solid galena. An incline abaft sund on the Stowing a Brooke wine is down 40 feet, showing a strong vein from top to bottom, the lead predominating over the quartz. The average assay value of the vein, in bulk, is estimated at a fraction over 19 ounces of silver to the ton, and 22 per cent of lead. The sund on the ton, and the first of the tot in the ton, and the first of the tot in the ton, the tot of the ton, and the first of the tot in the tot of the ton, the tot of the ton the tot of the ton, the tot of the tot of lead, to the tot of the gold contents, which are not asy nothing of the gold contents, which are not asy nothing of the gold contents, which are not

istry, would in the near future be brought unpress the hope that his favorite science, chem-(Weltten for the fluence Rease by Asraca.)
When Humphrey Davy visited the great services of Ereconner La Place in Paris, and ventured to ex-

## A B C of Astronomy-No. 4.

is calculated into the ore-bins, and the plant is calculated to be the most complete concentration of the most complete concentrating works ever made. Mr. Krom having that this mill be the most perfect one he has given full latitude in the most perfect one he has the instantiant of the proceduration of present and complete dry concentrator in existence. In connection with the plant is a fine assay and complete dry concentrator in existence.

In connection with the plant is a fine assay of complete dry concentrator in experience description of the confidence on many of the payer in obarge.

The engineer in obarge of construction is the foundries at three vaperience commenced in the foundries at three vaperience commenced in the foundries at three vaperience commenced in the foundries at three vaperience connection.

From 50 to 120 men are conresently employed about the miles and works. The paylays control the foundries and works.

which it seems as if nature, in the infinite plentitude of her power, had sifted out and deterior humanity to gave at with wonder and adoration. Before proceeding further it may be well to some of our readers. You are doubtless aware of our readers. You are doubtless aware the action in the heavens in one year's time the date of the observation; or that it will make its appearance say, to-night, four minutes wearler then it did tast night. Multiply this make its appearance say, to-night, four minutes by 365, the sumber of days in a year, divide this product by 00, and you get from the date of the observation; or that it will be seen in the case of the observation. This is not action brings the out days in a cought for our purpose.

This is not actronomically exact, but it is near cought for our purpose.

By the assistance of the diagram you have cought for our purpose.

By the assistance of the diagram you have been the new of the normal manual ma

across the milky way toward the southwest, and being a conspicuous object, the observer is not likely to be mistaken.

There is another star of the first magnitude to the souther the constitution Pegasus. This not it is not in each of the southern horizon. It is in line with the two the southern horizon. It is in line with the two the southern horizon. Pegasus. This completes the prominent stars of the first magnitude, with their belonging constellation Pegasus. This completes the prominent stars of the first magnitude, with their belonging constellations with the sall soon have a rich treat in the amount of the night.

We shall soon have a rich treat in the apparatus of the most noticeable and brilliant constellation of the heavens—Orion, with its pearates of the most noticeable and brilliant constellation of the fareging after it the paratus in the south of the fareging after it the south of the fareging after it the south of the word or two here on refraction, which plays an important part in the science of asplace of an You may have noticed that the portion of an You may have noticed that the portion of an You may have noticed that the portion of an You may have noticed that the portion of an

And now we recommend again the study of this enabling science. It litts man above the petty cares of lite, and millionaire and poor man can here meet on neutral ground, and both enjoy the beauties and infinities of nature.

You may have noticed that the portion of san transportant broad the common of the common of the control of the

## The Purcell Mines.

Large Silver-Lead Deposits.

automatic wire tramway, 2000 feet in length, and also the compressor, drills, blower and sammill. Mesers. Holbrook, Merrill & Stetson No. 8 California atreet, this city, furnished the race is in nothing made more manifest than in the superstitions they entertain about deep-vein mining. Would it be believed that a people laying claim to divisition would be machinery and appliances. Parke & Lacy of mining plant, which, when completed, will be supplied with all the most improved modern above mining companies is now known as the Sweetwater Mining Company of Treasure Hill. At Seligman, Mr. Robinson is now erecting a The ignorance and weakness of the Chinese anido ai face of Treasure Hill. The consolidation of the A Long-Standing Obstacle to Mining other properties covering nearly the entire surprincipal owner of the famous Original Hidden Treasure, Mammoth, Stafford and a number of seen ignored as unworthy of mention. shall find that they have by common consent Robinson, who is also a managing directo e so unimportant compared with the Marslope of White Pine mountain. The principal mine is under the management of Eugene N. part with his associates John A, Sutter and Peter Wimmer, As regards the placers dis-covered and worked here at an earlier day, they White Pine county, Nevada, upon the western lating to the mining development at Seligman, perhaps, in so far as it ought to be shared in We had a conversation this week with Hon. Samuel Liddle, quite recently from Eastern Nevada, and learned from him some facts reus shout the most flimsy. As to Marshall has been awarded this honor, so is he likely to continue in its undisturbed enjoyment, except, ot smees sornoM samodT to Maded at becare to coming to the front as a very rich one. The W. Marshall the honor of having been the ore is lead and silver principally.

ure. As a consequence mining, more especially for the precious metals, was long ago almost promulgated to prevent any such rash proce ingly. Laws are therefore enacted, and edicts edge, and even among the high Government officials. The ministers of State, the Emperor and his advisers believe in it and act accordand his advisers believe in it and act accordand illiterate masses. It prevails among those making pretensions to education and knowl-Nor is this ridiculous notion confined to the terior of the earth? And yet, such is the case. fear of giving offense to the genii or demons that are by them supposed to inhabit the indeterred from pursuing the ores in depth by the

They have been willing enough to labor in workings in this country, a peculiarity no-ticeable from their first appearance among us. The multiply in the ratio of deep exploitation. The feat of provoking the munity of these gobline for or are a monarile when the monarile munity of the deep and expension of the feat of ot the fact that serious accidents are apt to rious gases in the deeply worked mines, coupled the encountering of water, bad air, and injuwholly stopped in China.

What led to this absurd idea was, no doubt,

What led to this absurd idea was, no doubt,

drift digginge. From such shallow workings it is possible to greater deptha than are here reached in the the ore-bearing veins are rarely ever exploited words, mining operations bere fairly represent those carried on in the Celestial Empire, where from the mine is comparatively easy. In other make little water and are never troubled with bad air. But little blasting is required and ac-cidents rarely occur, and when they do, escape lie near the surface; so near, in fact, that they have been employed from the first. These deposits, however, though wholly subterranean, the drift mines, in which great numbers of them

emphasize their wrath. killing or mangling of a miner being considered a means taken by these subterranean demons to st such invasion of their domain, the accidental deep mining were construed into an expression of displeasure on the part of these evil spirits depths. The inorement of water, the presence to had air and the other troubles incident to not attempting to pursue their ores to greater more knowing ones this fiction as an excuse for danger to life and limb, there was invented by the besseroni of sevlesmedt gaisogxe tuodiiw bas common China pump. This being as far down as they could go with these simple appliances, to lift the ores and raise the water with the

uries very little has been done with them. many in that country, though for many centthe gold and silver veins, of which there ar ing taken by the Imperial authorities to work created there a change of feeling regarding min-ing. Hence the talk we hear of measures begoing back to their native country have already perience they have come to discard the foolish notions about the doings of these malignant fiends to which they had been educated, and count or working on hire. With this new exin the deep mines, where quite a good many of them are now employed either on their own acbeen gradually getting into the way of working Of late years the Chinese on this coast have

## California. Another First Discoverer of Gold in

in the fall of 1845. ments recently published in a Montana paper, arrived in California overland from Missouri one Thomas Monroe, who, according to statefirst discoverer of gold in California, like the heirs to the Blythe estate, multiply apace. The most recent aspirant to this distinction is Claimants to the honor of having been the

which Marshall two years later picked up the first augget of gold. That this gentleman from the truthfulness of his statements. Among other things so seen and described by him was Sutter's Fort and the sawmill, in the race of ther informed that this Thomas Monroe in re-lating what he had seen while in California, described many localities and objects which were afterward identified, tending to verify Whether this gold-dust was obtained by dig-ging or in the course of trade does not appear. In confirmation of the foregoing, we are furfollowing summer, our adventurer managed to obtain a quantity of gold-dust, which he took that there actually was gold in the country. Before returning to Missouri, which he did the some of the Jesuit Fathers, who assured him was a mineral country. In pursuance of this purpose, he explored the coast for 700 miles, having in the course of his travels encountered bim, Mr. Monroe, it would appear, determined to prospect for gold, being convinced from his experience in the lead mines of Illinois that this Having disposed of the goods brought with

tadt bas ,beneitnem neanem edt ai bas emit edt Premising that there can be no doubt about Thomas Areanising ta signosticed California at tion that he possessed the gift of prevision. menced, may be accounted for on the supposimill a year before it was built, or even com-Pike was able to see and describe Sutter's saw with him and exhibited after reaching home

having been paid in bronchos, a band of which he took with him on his return to Missouri. For a number of years prior to the period of thereof the gold-dust in question, the remainder ner he did, having seemed to him, we may well believe, fully 700 miles in length, Here, disposing of his goods, he received in part payment the journey he had made, traveling in the man Eathers. After a time he reaches Los Angeler, could be have met with any of the Jesuit the south, since only by going in that direction dust came from, as well as the manner in which he probably procured it. Evidently Monroe on reaching this coast turned his course toward will, we think, serve to explain where that goldby some means be obtained while here a quantity of gold-dust, a brief examination of his narrative, or rather perhaps it should be said then arrative which others have framed for min,

received for the goods he sold in California part payment in gold-dust and the balance in buckbroncho. Clearly to our mind, Thomas Monroe a to soing st trods, sounce, shout the price of a The value of gold-dust was at that day well established in Los Angeles, where it passed cureven so much as saw the place whence it came of the precious metal with his own hands, or question in these San Fernando placers; the probabilities being that he never collected any Missourian ever dug any gold, it was beyond had been gathered in the San Fernando mount-ains 20 miles north of Los Angeles, at which place this gold-dust found a market. If our which we are speaking, small lote of gold-dust

such having been the account given of them by placers whence it came were rich and extensive, likely to be told by the natives that these quire where it came from, and would be just as it is natural to suppose, as he would be very likely when he received this gold-dust to inof business. The prospecting he did was from his covered wagon as he journeyed through the valleys on his way south. That he obeard a good deal about these as ne Tennande diggings it is matural to suppose, as he would be very much could have been accomplished in that line and this included the winter months, when not seeing he was in the country only about a year e done his work in a very hurried manner, If the hero of this story prospected the coast for 700 miles, as his chronicler relates, he must

> R CHENTIFIC DEES MINING

DEWEY & CO., Publishers.

Office, 220 Market St., V. E. cor. Front St., S. F.

Terms of Subscription. St. New subscriptions will be Annual Subscriptions will be decimed without each in advance. All arrearages must be paid for at the rate of \$3.50 per annum.

Advertising Rates.

London Acenт—Alferd E. Ann, 63 and 64 Mew Broad Street, E. C.

Address all literary and business correspondence and Drafts for this paper in the name of the firm.

Our latest forms go to press on Thursday evening.

Entered at S. F. Post Office as second-class mail matter

A. T. DEWEY. SCIENTIFIC PRESS PATENT AGENCY.

Saturday Morning, Dec. 3, 1887. SAN FRANCISCO:

## TABLE OF CONTENTS,

EDITORIALS.—An Improved Fump; A New Form of Blast Furnace, 858. Passing Events; Another First Discoverer of Gold in Chiner, The Furnesh Mines, 556. Sterts Monley Discovery Orystallography, 857. LLUGTRATIOMS.—Mesick's Improved Fump; Design for Black Furnaces, 858. Ideal Section Across Sierra Monley Furnaces, 858. Ideal Section Across Sierra Monley Furnaces, 858. Ideal Section Across Sierra Monley Furnaces, 858.

MIBOELLANEOUS.—The Mines and Miners: De-Mail Mileous and Miners: De-Mobile Mines: Selignan, 35-6. As Edward Selignan, 36-6. As Edward Selignan, 36-6. As Edward Selignan, 36-6. Selignan, 36-6

Ascenser, Felephone Chanescon Between Sinps, Dulability of the Cypress, SSG.

Mill in Africa, To Prevent Porest Fires, The First
Mill in Africa, To Prevent Porest Fires, The First
Diet, The Time to Steep, SSG.

GOOD HEALTH.—The International Hygionic Conteres, What Disinfection Means; Treatment of Ingrowteres, What Disinfection Means; The English
ALINING STOOK MARKET.—Erels as the San
Francisco Stock Board, Motices of Meetings, AssessFrancisco Stock Board, Motices of Meetings, Assess-

Business Announcements,

bice—Sukro Tunnel Company.

## Passing Events.

The rain has had its effect of dispelling the mills. The result will be the employment of many more miners than for a month or so filling the reservoirs and ditches and starting up style in which the discovery was first heralded. An abundant rain has fallen this week all over the State. This will have the effect of vorably but by no means in the highly colored attracting great attention. We give, in an-other column, the report of the citizens' com-mittee that visited the find. They speak is-The recent gold discovery in Arizona is still

steambosts and a short stage line, will open up
the entire region. Until the last year it has
Deen an almost unknown land, but now it is
Of the many who have confested with James State. up the Okanogan river to a point but nine miles from Ruby City. This railroad, with the line of steamers up the Columbia river and on ern Pacific people are now figuring on a railroad from Ellensburg to the Columbia river, a distance of 30 miles, to connect with a new the Second Thought for \$65,000. The Norththe Fourth of July for \$45,000 and the First Thought for \$50,000. They have also bonded Alaska, and they are a great deal essier worked. Colorado people have just bought There are about 150 men at Ruby and about the same at Salmon. In the opinion of some who have been there, the mines there beat mines, and many men have gone there from Taconna, Seattle, Portland and other northwestern towns. The mines are in Stevens orange, Western Ferritory, 150 miles north of Spokene Falls and 40 from British Columbia. There are shourt 150 mns as Enly and shourt any fears of a dry season.

Attention is being furned to the Salmon river more reachers and season from our fears there are the season from th

prove useful for fertilizing the lands of the a sample of phosphate of lime from Talare county, which, if of extensive deposit, may Mr. I. B. Randolph. There was also received the New Almaden quickeilver mines through most sticks of crystals of calcite from THE State Mining Bureau has received a

to work it to a proft, and no expense has been spared by the able able assistance of Prof. Thomas Price and Mr.

sulphide, has been experimenting for a process

eastward. Mr. Robinson being aware of the existence of this large deposit of lead-silver

ore, operations were suspended on account of free and easily working chloride ore being discovered upon Treasure hill, five miles to the

trict, but, not being adapted for this kind of

psec of working this and other mines in the dis-

of White Pine. Large and expensive reduction works were erected at Monte Cristo for the pur-

sreenoiq edt ot aword liew bas gaibasts lits si town of Seligman, under a nut pine tree, which

point half a mile down the canyon from the

Pine mining district was first organized at

The Percell mine was discovered in the year 1866, being one of the first mines known in the White Pine mining district. In fact White

ley. The vein crops out boldly at many points, being several feet above the surface, and can be

lay are of in the white sage flats of Mewark val-

mountain, and down its western slope until lost

seen. The croppings can be plainly seen and traced from Shermantown across White Pine

extensive lead-silver sulphide mines be has ever

up in case the mill is not completed as expected. Mr. Liddle expresses the opinion that the Purcell mines are without is doubt the most

ed during the snowy season, and the ore piled

by the middle of January next if the weather

The entire plant is expected to be in operation

for which are upon the ground, and a large force of workmen are at work framing the stations.

construction ef a wide tramway, the castings

the large quantities of lumber required for the

tuo gaiarut bas aoitsreqo ai osla si llimwas

up a complete machine shop so that all work is

ed a Burleigh compressor, capable of running three Ingereoll Eclipse drills, He has also set

of 300 pounds per square inch in the water pipes, no serious damage is lister occur. Two special watchmen are on duty day and night. Mr. Eobinson has erect as Burleich compressor capable of tuming

instant use, so that with a constant pressure

have been placed at suitable points ready for

erty against fire has been taken by the man-ager. Hydrants with carbolized hose attached

every precaution for the protection of the prop-

machine shop, tunnels, mill and town, and

elevation to carry the water into all portions of the mine. Heavy wrought-iron asphalt-covered pipes have been laid and connected with the

mountain-side, and one at the mine at sufficient

bead, one 200 feet above the mill-site upon the

gaings and t a succept of Seligman. Three large so the sucception and the sucception of the sucception

tained from a never-failing spring three-quarters complete and perfect concentrating dry works ever constructed. A fine water supply is ob-

Krom has promised that this shall be the most

ing and putting the machinery in place. Mr.

force of workmen are at work upon the build-

the machinery is a port as the greater portion of the machinery is a part a par

a dry concentrating mill of 100 tons' capacity

ware, including gas, water pipes and fitting, corrugated iron roofing, etc. Mr. Krom of New York City has the contract for constructing

of this city furnished a large amount of hard-

done in a thorough, workmanlike manner.

In any event the mine will be actively work-

easily traced a distance of 16 miles.

## Crystallography.

the article in the eighth edition. tal, but goes beyond the elements. It would be an excellent thing to study after going over edition of the Encyclopedia Brittanion is capi-The article on "Mineralogy" in the ninth istry comes next to it, but is distinctly inferior. lography" in Watts' Dictionary of Chemcomprehensible elementary presentation of the subject in English. The article on "Crystalse, and it may almost be said the only, eralogical Science," in the fifteenth volume of the eighth edition of the Encyclopedia Britten-ica, pages 40 to 55. This is without question best thing to do is to use the article on " Minproached. There is, however, no special book that can be recommended for purchase. The cult of comprehension, whereas, as a matter of feat, it is simplicity itself if it is rightly ap-They appear to try to make the subject diffiwork, nor advanced work either, in English that is even a fair presentation of the subject, It may be stated that there is no elem we therefore answer the question in the Press. that others are interested in this subject, base evadw." seza od a siss sachnoquerroo A classy on a varw vratacenele as coirq tadw to or oradw." cale base "; benisado ed any udquigol ed yam 11 "! slebom istavyo to toe a esadoruq sacidas a sidir ni batacratici era zarodto tadi.

of 001 to tee egral Rochester, M. Y., for \$10. Possibly a With respect to the models, a set of 43 can be obtained in wood 14 inch in diameter from

chada is the counterpart in stratification of the Sierra Mojada, I mentioned one important exdifferent from a fissure vein, or a formation rock. In my statement that the Sierra Planothers; but they are everywhere unmietakably yasm ni teel 02 of 81 of seasig emes ni tool eno inoda mori seirav atarta gairaed-ero edi lo crop throughout their length. The thickness Hence the ore deposits present distinct outhaving been deeply iron-stained in many places. have been eaten away more by the weather.

The country rook has thus often been left projecting above and below, that below and more friable than the inclosing rocks, and dip. The bodies of mineral are much softer omposition, with some variations in strike and to soitsinetoanado tanaimob emas edt gaitaes more or less metalliferous and everywhere prea distance of several kilometers, everywhere posits extend, at about the same altitude, all along the north flank of the Sierra Mojada for gether in chambers or chimneys as segregaquantities through their mass, or collected to silver-bearing minerale disseminated in great decomposed limestone, impregnated with fer-ruginous materials, and containing lead and Sierra Mojada are several bodies of altered and

Salbillo, Coabuila, from whose paper we take Mining Engineers by Richard E. Chism of has been given to the American Institute of air line from Escalon station, on the Mexican Central. A very full description of the district consisting Light and State of the state of t Coshuils, Mexico. It is about 70 miles in an

chant break. The horizontal scale is 1: 50,000 through the Esmeralda mine, showing the anti The accompanying out is an ideal line N. S. E. -S. S. W. across the Sierra Mojada valley, Planchada the dip is from 25° to 30° northward. have a dip of about 35° southward; on the Bierra trict is between east and west and southeast and northwest. In the Sierra Mojada the shale The strike of the stratified rocks of the disthe following facts:

Art, Liddle is a mining engineer of 25 years' ing as a whole a cordillers of which the Sierra Mojaca, This is the ore-bed, which is not at Ward & Howell, Natural Science Department, on each side of and parallel to this one, away at points not far from the extremities of the present valley. Other great flexures of the same kind, formed at the same time, are found declined to E. S. E. and M. W., until it faded ecre Sierra Mojada monnatain and thence its highest point at or about the present highest S. E. and N. W. The fold probably reached has been made by erosion of the fold of an anti-olinal, the main axis of which is approximately It is evident that the valley of Sierra Mojada

> banorg aoqu seaim fleorad edt to triniciv etnib emmi edt ai tuo sredmit gaiaim diw beilqqus Fureka, Nevada, have been to a great measure The Eureke Consolidated and the Richmond of boow eds to emos; soor sog & \$3 per ond; some to word is a cond; some to to word is to out, the country of which is practically indicated out with the condition of the country of the cou is plentiful and can be delivered in the wooding will coet not more than \$1 per ton and smelting oan be done at about \$6 per ton. Wood exceed \$3 per ton, and perhaps less; concentratof for ta quab-lim edt ta berevileb bas benim location of the mine is such that the ore can be and Mr. Krom of New York City, a process of dry concentrating has been adapted, whereby the ore can be worked to a good profit. The Dodge of Savage Sons & Co. of San Francisco,

> mon. The whole vein, so far as known, will assay in silver 30 onuces, lead from 20 to 30 per cent, and gold 35. The quantity of ore moonu ton ste not red blog ni 01\$ lo sysses of the percentage of gold as depth is attained. Commencing with \$2.50, at the deepest point The most notable feature is the increase and somewhat wider at the bottom of the inbeen sank at different points along the ledge, and in every instance the vein is continuous stands varying in depth from 50 to 300 feet have Mr. Liddle states that the Purcell vein proper varies in width from 2 to 30 feet, Several innow owned by Eugene N. Robinson & Co.

well defined and conore ellew gaigaed de signs egereve as de foot and to the northeast, at ei qib eti bna ,teew southeast to northmont ai niev edt teet, The course of oog thods mi from the surface is the ledge 1800 feet deep tunnel to tap from the surface. s ta begget niev depth of 300 feet been driven and the mines ever discovered. A tunnel has ver-lead sulphide -lis evisnetxe tsom rad eat tasmybuj edt is one ei lies sid ai tadt gaiyss ed bas coixels bas ni noiteries on ead Ritish Columbia

SIERRA PLANCHADA ADALOM ARREIS

IDEAL SECTION ACROSS SIERRA MOJADA VALLEY, THROUGH THE ESMERALDA MINE.

ADVICES from the Calumet and Heels copper very competent and enthusiastic instructor. laboratory practice in this work, The depart-ment is in charge of Prof. A. W. Jackson, a and crystallophysics, There are facilities for investigation in methematical orystallography a discussion of the methods and instruments for discussion of the different crystal systems and theoretical crystallography and orystallophysics will be taught. This includes a mathematical

aight, or, at most, with the use of the

ta sisteyro isrutan

aystem as will enable

the orystals of each

-dorq eat atiw Lirai

student such famildose gaivig to weiv

Crystallography the

have an excellent opportunity of purening this study.

esrnoo Zainim edt

California who take

this students of The students of to Visite University of

yensable in pursung

eibni Tirsən əsrnoo

\$25. They are of

ed for from \$20 to

125 could be obtain-

gainimieteb to m

the smelting works have been blown out, mines say that it is expected that the fire will burn several weeks and that the mine cannot be opened for a still longer period. Ten atamps are now idle in the mill, and five furnaces in the smalting works have been home out

Cosl Co., caught fire one day lest week. It is supposed to have caught by a naked light ignifing a tarred curtain. The miners escaped SOUTHFIELD mine of the Vancouver, B. C.,

ceived at Pioche, THE machinery for the concentrating works at the Yuba mine, Lincoln county, has been re-

Mexico, than ever before. The outlook of the MORE miners are at work at Kingston, Mew

A Good strike has been made in the Cliff ere reducing 40 tons of ore per day. THE reduction works at Portland, Oregon,

mine, Spring City, Nev.

spread through a large amount of rock, would with its accumulated minerals, and redeposit-ed further on; and thus the deposit at first for the form of the form of the foot of the foo would cease, and the rock would be dissolved the deposition of minerals from the solution least heat the rock to such a temperature that orack-fillings. If the stream of heated wa nearre their deposition as impregnations or as water or active and in a state of the stream of the s these anbstances in solution, in ever so small quantities, it is easy to see how the immense cooling surfaces of a layer of limestone could stream of hot acid waters holding lead, silver, iron and other elements in solution. Given pies, one or more layers of softer limestone, which, perbaps, through being oracked and formed during metamorphism, gave passage to a ohasa. My own theory of the formation of these ore bodies is, that there existed at the geological horizon which this deposit now occur. -nalf arrels edt no banot need evad farenim to in the general denudation. Only mere traces present Sierra Planchada, and were carried away the north side of the anticinal, which, as we had seen, occupied the present valley, or that, if they came over to that the level of the were higher up than the level of the avere higher hap the nearliers and sevent sierral phenched and were carried away. At the managing of the managin

andation in which the upper strats were swept onditions therefore the state of the description of deference of the description of the state of generated by the friction of these displace-ments and foldings was sufficient to partially metamorphose the limestone rocks and to con-Mojada and its continuations, the rocks now upon the surface were deeply buried below hundreds of feet of other strats; and the heat

terward have been swept away, and its freg-ments strewed along the pathway of denudation. and the eruptive dyke which it formed may afpyroxenic rock referred to; its original out-orop may have been at a great distance from the present site of many of its fragments; plainty indicate that they were slowly and plainty indicate that they were slowly and gradually made by the section of a lateral show ing force, acting, it may be, throughout a long series of ages. This general movement may have been accompanied or followed by an ignemay and experienced to the surface the our studying which forced to the surface the our studying the plainty and the surface the surface the state of the surface the surface the surface the state of the surface the sur tion. The form of the flexures, their common trend and general relationship to each other, any hypothesis of violent uphesysl and erupaway, leaving exposed the present rocks.

It does not seem necessary to resort for the explanation of the formation of this range to

kind not often encountered in Mexico. Being while the cavities left in the rocks by the first very different from the nanal well-defined fisher the stream would, in their turn, be fisher to which Mexican mining experts filled with mineral contents. Ore Deposits. Mojada are of a

> mining and mining machinery. He is upon the ground personally directing the work. rector and principal owner, is a gentleman thoroughly conversant with all the details of

> business of the Southwest, Smelting Company which controls the El Paso and Socorro smelting plants, there may be some much-needed competition in the smelting Waw smelting works are to be erected at El Baso by parties from Brooklyn, N. Y. The Bilver City. Enterprise says that if this new outfit doesn't consolidate with the Rio Grands outfit doesn't consolidate with the Rio Grands

000; the Blue-Eyed Nellie, \$100,000; the Hope, \$68,000, and the Cable, \$27,000. Montana, returning " net proceeds" for taxa-tion this year are the Granite Mountain, \$100,-THE mining companies of Deer Lodge county,

been traced in Montana, reaching from the Big A COALFIELD 200 miles long is said to have

Horn mountains, in Custer county, to the Brit-

need even coiled to allim-straup and ald to to vitinase to throose no mwob tude of beerof

THE WORK of development is progressing in the mines of Jefferson district, Nev.

at the El Paso smelting works. THEY have been having trouble with strikers

atnemqida noillnd THE Transfer of the state and respect the Tables of the Ta

## SCIENTIFIC PROGRESS.

Coal-Tar Products.

crystals (some well defined) is found upon the crystals (come well defined) is found upon the except for a slight sweetness of taste, correspond in obsercters and tests to benzoic soid. The savest flavor, I think, may be due to the presence of a very small quantity of undecomposed sweetharin, carried mechanically with the funes, and give a more decided odor of bydride of and give a more decided odor of bydride of benzoie than the powder itself, also communities and of the palate. Heated over the farme, with a dull, yellow smoky flame, farme, with a dull, yellow smoky flame, softling a residue amounting to 0.65 per cent of lesving a residue amounting to 0.65 per cent of lesving a residue amounting to 0.65 per cent of copper solution, but, like glycerine, liberates solution asiles. It does not reduce an alkaline copper solution, but, like glycerine, liberates boracic soid from borax, the latter salt disconsioning ascobarin readily in aqueous solution, due no donbt to a displacement of the boracic soid from borax, the latter salt disconsioning acceptarin readily in aqueous solution, due no donbt to a displacement of the boracic soid from borax, the latter solution, acid.

Telephonic Connection Between Ships,

Edward D. Graville, F. C. S., in the course of a series of notes on seconarin, says:

The sample to which the first supply that are peepled to the first sample to which the first supply that have for the first supply that the sample of the wide difference I have seen the countries. It is the first supply that the sample of the wide difference I have seen the countries. It is the sumple to expend the sample of the wide difference I have seen the supply of the sample of the wide difference I have seen the supply of the sample of the wide difference I have seen the sample of the wide difference I have seen the supply of the sample of the wide difference I have seen the sumple to supply of the potential article, and the sample of the wide difference I have seen the supply of the supple of the wide difference I have seen the supple of the wide difference I have seen the supple of the wide difference I have seen the supple of the wide difference I have seen the supple of the wide difference I have seen the supple of the wide difference I have seen the supple of the wide At the recent meeting of the American Association for the Advancement of School 
Science has always benefited by aktention to the control of the co

ment. The axies are tested under a heavy triptammer, three blows in succession being the bammer, three blows in succession being the audjocked to this test. The inspector is required to witness every blow. On the occasion ed to witness every blow. On the occasion was called saids, and much a being the fair occasion was called saids, and upon his returns the third blow was given, when the exte broke. This surprised every one, as there had been no break. Then the operator began to think the same heat. Then the operator began to think the matter over, and inably he decided to make a trist when the said broke. Again and again was the and the axis broke. Again and again was the attempt made with invariably the same result, there were no breaks. The facts suggests ome atthere were no breaks. The facts suggests some there were no breaks. The facts suggests one peculiar changes in the conditions of the steel while the axies are enforced not to call the inspector away while the axies are undergeneous of the product of the inspector away while the axies are undergone of the product of the inspector away while the axies are undergone of the product of th

## Night-Work in Machine Shops.

After a great deal of discussion on the subject of night-work, asys a cotemporary, employers have not resched any uniform conclusion,
apparently because they have allowed their deaires to bias all their observations. Night-work,
or that which has to be performed by lamplight,
or that which has to be performed by lamplight,
or that which has to be performed by lamplight,
do good work by any light which has yet been
used for the purpose of shop illuminstion.
beto say that such work is not as good in quality as that done by daylight. How great a
falling off there is likely to be, any one may
falling off there is likely to be, any one may
metal work in the evening, and again in the
metal work in the evening, and again in the
daytime.

The following to do any little delicate piece of deep by trying to do any little delicate piece of deep by trying to do any little delicate piece of deep dyvime.

The following conclusions may be set down as facts, having been deduced from a long experience: Might-work does not pay for the say work done at night-is not satisfactory in quality of work done at light-in that that that done by daylight. The quantity of work done at let lighted done after lamps are lighted quantity of work done after lamps are lighted different as compared with what the end of the daylight. The facts place all the same. Might any little coning of in the daylight work, the same shift on the daylight work as compared with what the same shifts coming to in the daylight work as compared with what the same shifts only on the daylight of the mark. Whiter and annumer the men could do in the daylight work and not the dayle work and not the light up in the winter months, but close when it shows the contracter was made, it was the nabit not to have a scoonne daylight and and not only saved the captain in December, January and Rebrary exceeded the contracter was made, it was the manner the men fook and for nine hours' work, the early close and found that he had not only saved the except by year. At the end of the year the manger of not between daylight on the man december. The number of men, observed the except of old and little in wulker.

To or even full time in wulker.

To even full time in wulker.

To even full time in wulker.

To or even full time in the work of such and and and all desilie having seen of give light enong in the daylie seen of give light enong in the day work and sufficiently liluminate cast or wrought sees for the some of the most seen of give light in the some of it is cheep of the most seen of give light enong in the seen of

can work."

Dow't Economize in Boilers,—If there is a situation in the world where "cheep" appliances have no place, it is around a boiler. And the secance of danger in their use, but because in the end cheap boiler fittings to much, Just a few minutes reflection will convince the most skeptical that the grates in the time, are coetly luxuries. The best boiler fittings that can be had are the blow. Out that the state that is always wrong, and the blow. The best boiler fittings that can be had are the boom off that best boiler fittings that can be had are the boom off the best boiler fittings that can be had are the matter to avoid having them.

Maint Brink for Hardening Steel, —It is well known that said thine is largely used for hardening steel. But it is not so well known that its peculiar qualities in that direction are much improved by age and uset. It is said that the value of the tape only and that the value of the purpose mentioned is largely increased by age. It is said that in some cases of these share have the said that in constant use to these share and a little sait being added from time to time, It appears that the conformation of the hot metal into the same shard dripping of the hot metal into the same solution alters in some way its character.

MECHANIGAL PROGRESS.

Brazing Brass to Copper.

A gentleman in Blazing Brass to Copper,

When the Manner of the Macha. Worker,

Worker in a state of the Macha. Worker,

Worker in the Macha. Worker,

Worker and the manner of the Macha.

To brass brass to copper as a process which a process which a copper of the manner. The solder which until the copper as a process which is the copper as a process which will work would make the order of the same time as the copper as the copper of the work would be solder. The solder which will work would be solder which will be solder which work would be copper, otherwise the work work to be used is borax, rubbed up the repetit of the work in the copper, otherwise the copper of the work is amount of beat and the metal of the work is a solder. The done, if the work is amal the blow-pipe of the work will be made a source of the work will be made to great there is danger that the body work is a process to the copper of work is a congruent of the work is a safest, because if the heart is too great there is danger that the body comes the colder melts or will be as one on as the solder will be melted in the first of the work is piper to the work is piper to be applied until the solder melts or will be a solder will be melted on the process of the congruence of the same the consent of the same the consent in the solder will be solder to the process of the proce

STORMS AND STEER HALLS.—A singular theory of the purpose if the breas is not too softs and to the breas is not too softs. As a short of the order of the breas is not too softs and been promulgated in Mexico concerning the order of rails 
CAREOF STEAM BOILERS.—Mochanical races, and conditions are decreased as a fact of steam series, and good performance of steam sergines, as a hown by indicator cards, but, on the other hand, the holler is the cards, but, on the other, and se hown by indicator of the power, and we should also see to it and know whether we are receiving the best economy from a given amount of fuel, of more importance than appears at first slight, for there are many little things that affect the former in the seem and mangement of a steam oblier is explaint as and mangement free, generation of steam and water leaks; keep the other steams and in good engineers: Keep the boiler clean and in good engineers: Keep the boiler clean, and say to olear of cinders; keep the ash-pit clean, and add address clear of sood air under the grate-bar than in a complete cold air under the grate-bar than the more cold air under the grate-bar than allow of the clear of sood say the sable the pump of the sept at work regularly. It is bad about the steam and the sounds and the sounds of the sale steam and say of the sale say of sood thing, and the pump mangement to purp the sale say of steady feed-water to boilers are too manifest to need repeating.—

QUEER FACTS ABOUT STEEL.—Large buyers of articles of steel manufacture keep men
conestantly at the works to examine and test the
product, in order that there may be no inferior
articles delivered. This is the case at the
also made of the manufacture of rates are the transfer and or the transfer articles
also made of the manufacture of rates are the manufacture of rates are to the transfer are of material particles
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
also made of the manufacture of rates are the
area of material in Phteburg, by more
are the works of manufacture of rates are the
area of material in Phteburg, by manufacture of rates are the
area of material in Phteburg, by manufacture of rates are the
area of material in Phteburg, by manufacture of rates are the
area of material in Phteburg, by manufacture of rates are the
area of material in Phteburg, by manufacture of the manufacture of rates are the
area of the manufacture of rates are the material from the

and Prof. Ludwig, the president, said that all the objects of the congress had been estained.

In. Proteoforate, of the next congress would be "proteoforate," of the next congress would be undertaken by the Prince of Wales.—Valure, undertaken by the Prince of Wales.

### What Disinfection Means.

where the present has been disinfected." That is shouse all you need said when a weeselve autypes a power and were a did when a wesselve autypes a power and we have a wesselve distingt a search of the beaks over the lime set port. "Portectly safe," the bealth a contragious disease, it could be contained the disease, it can be for no marker how violent the disease, it is distingted to marker how violent the disease, it is distingted to marker how violent the disease, it is distingted to marker how violent the disease, it is not distingted to mover with a subject of the country. "Thoroughly the country of the feet of the decidence of the feet of the country of the country of the country of the country of the feet of the country of the the country of the country of the country of the passengers of the physical of the point of the country of the physical of the point of the country of

means above indicated.—Exchange.

Texament over luceowine Units.—A very common and troublesome affection is that which common and troublesome affection is that which most useful with the ingrowth of the is popularly termed "the ingrowth of the nails," and which most usually occurs by the nails," and which most usually cocurs by the sation in the sail trom the area its name would imply; the sation in the sail trom the use of tights above. If their estes is permitted to continue, an nlost is the nail trom the use of tights above. If their estes is permitted to continue, an nlost is model in which the edge of the nail is imbedied. I their estes in some instances to prevent welling, evere in some instances to prevent welling. Treatment for this condition often demands them the vorse of the engineer of the sail in the particularly professional assistances should be sought. The sacreton and reduce the awalling. After the irritation and reduce the awalling, a flaxesed by stoe since should be sought, and it very painful, a flaxesed by stoe will bring relief. After the indication of the sail should be their estinction of the sail should be the nail and the nail, and the nail, and the safurated everal lays, after which the tender research several days, after which the tender of infine, and the application of the sail, and the application of the sail, and the application of the sail, and the safurated done by pressed between it and its attender the arms of the sail, and the safurated done by pressing cotton between it and its attended the amaly electrice, and the safurated done by pressing cotton between it and its attended the anally and the sail, and an an be suggisted and of the sail, and sail and safurated done by the sail of the sail, and say which one he suggested the sail table. An entire of the sail, and als safurated everally electrice, and the safurated done by the sail of the sail of the sail, and als strenged the sail of the sa

gress of the control 
IMPANUTE DEATHS.—It has been estimated that of every 100 infants ted on mothers milt.

Of 100 wet-mused 18 die, and of 100 fed on cintart foods "51 die, by the end of the fed on Of 100 wet-mused 18 die, pa the first winter toods "51 die, by the end of the first vest.

pieces of metal and causes them to unite. The intensity of the ourrent naturally varies with the work to be done. For requisiting it a battery of accommulators is used, and the number of the latter is increased or diminished as need be. This process of welding is largely employed in the manulacture of metallic tanks and reservoire.

A VECKTABLE DIRT.—A vegetarian reporter to the British A dedical Journal, the result of the British A dedical Journal, the result of the British A dedical Journal, the result of the instance of the series of the series to get them down. As soon as the befound the vegetables insipid and had to became accustomed to the diet all outdinments. The desire where put aside except a little salt. The desire for alcohol and tobacoo left him spontaneously. Then all his digestive fanctions became regular, and he found aimself wholly free from head-one account of the same accessed to the found and the found armself armself and the found armself armse

THE TIME TO SLEEF.—The matural duration of the 24, and stored of slope of slope to slope to the 24, and stored of slope to slope to the soundest lives. Who can secure this lead the soundest lives. When so colook to 6, and it is most readily obtained by oultivating it as an automate, proceedure. All attimulants, all excessive fatigue, and pervert sleep even if they do not prevent it. The not of the nost equally warmed best ventilated and the most equally warmed to maintain the house. The sir of the room abould be she house. The sir of the sleeper should segmest be the comfortably warm. The bed always be the to conflortably warm. The bed should be soft and yielding. A regular tendshould be soft and yielding. A regular tendency as one of the standard is any to sleep at other hours than the natural sign of error of habit or of nervous denaments.

# GOOD MEALTH,

The International Aygienic Congress.

The Investment of the property of the property of the first of the fir

USEFUL INFORMATION.

THE FIRST BLANKET-MILL IN AFRICA.—The establishment of the first blanket-mill on the triose on outsined that been watched with great African continent has been watched with great African continent has been watched with great between of Burprise may be accused at the mount of your distances. Burprise may be accused at the mount of your wild gireffes, cetriches or and interesting a novelty in South Africa each of our wild gireffes, cetriches or and interesting a novelty in South Africa each of our wild gireffes, cetriches or could be one of our wild gireffes, cetriches or could be one of our wild gireffes, cetriches or checkerstood that according to the first secting on a special invitation of the mother of the mechanism of the mechanism of the mechanism of the machine from Cape Town, and situated as the wild see the content, who exhibit great aptitude for the work of the machinety. These haffir females and show great dexkerity in the manager, women, who exhibit great aptitude for the method of the machinety is driven by water occuery and seem very lappy upon it. Cheap labor work and soon content to work for one shilling per day wonen, who exhibit great aptitude for the area on the form of the manalest of this will soon place the colonial manalest or citally as the second of some of the machine of the prices would seem very lappy upon it. Cheap labor day in the manalest or service of the machine of the one of freight to England, is used. By this means inclearly more the one of freight to England, is till one one of freight to England, is used. The one of the source of the one of th

To PREVENT FOREST FIRES.—According to the Recorder.

To PREVENT FOREST FIRES.—According to be Oregonian, a bill will be prepared and laid be becomed and be ore the next Oregon Legislatore with the beginning to country every summer. It is assumed, and justly no doubt, that four these out of these proceed it of or orbit, that four these out of the spended and justly no doubt, that four these out of the proposed from fires started by settlers among the proposed ing and prescribing the time for finite last on the prescribing the time for finite for finite. "States of the country decided in the interests of the ountry decided in the outer of the fire of the forests." The interests of the ountry decided in the outer out all like the before the case of the outer that decided in the outer out all the fire of the the tends of the outer out all the fire of the tends of the outer out of concepts of the fire out of secret captures, it could last but a week or two weeks the most. There is now no regulation, and the fire out of the proposed law would make no tributes and grows the firing of stashes is simply a matter of converge to the worth many thousands of dollars. The last prevent monetains, outlines and grows trinners, accident or captrice. Fire once at the most, the weeks of the world make no therefain the summer and till the fall to supply and if it failed to stop large the sumber worth many thousands of dollars. The lasts prevent many thousands of dollars. The trinner worth many thousands of dollars. The same of the proposed law, severe benefit to supproposed law would make nould eathough the deciding the in the mountains, it would as the intidental advantage would be protection entidental advantage would be protection of the proposed law, severe percent enforced the last suppropriet of the proposed law, severe percent enforced on the capt as moiety to be protected of the proposed law, severe percent enforced in the last suppropriet of the product of the proposed law, severe percent enforced in the last suppropriet o

Are Frest Checutar, Saw.—The Waterville Mail of one of its purposes.

Mail claims that Capt. William Kendall, who came to that place in 1858 and erecked a sewming in the best place of its 1858 and erecked a sew mill, subsequently invented and put in operation the first circular saw was in operation for Waterville. The of I umber, The Mail mels the sesuming sire of its of its of invented to 1850.

Jet on our falls come years to 1850, and in operation for sawing lumor of Imber, to 1850, and in operation for sawing lumor of Imber see the or of the manufacture of the circular saw were Mesers. The main occur is the over, their mill occur previous to 1800, outting out clapboard meaning the manufacture to 1850, outting out clapboard. They were the seeing this saw in operation on a machine propelled by water-power and logs were sawed into four-leet length and placed on a mechine previous the similar to the turning lathe, where the bark amiliar string lathe, where the bark amiliar to the turning lathe, where the bark amiliar saw around the log, were then fastened on the clapboard machine, boards and turning on its ond row was taken off. They were the log was of sufficient dimensions as ond row was taken off. They board as propelled by a circular saw around the log, so the log was of sufficient dimensions as condrive out by a circular saw around the log, so have and for any one of the post of the log was of sufficient dimensions as condrive out by a circular saw around the log, giving the thickness of a clapboard by an index with the aid of a millman. The machine was threated a great invention at the time, and a town in the considered a great invention at the time, and the sid of a millman. The machine are considered a great invention at the time, and a town in the considered a great invention at the side of an interpretation of mathrangers wisiting the town.—Brunsanick (Mc.) Telegraph.

Welding by discribing and the new process of welding by electricity already noticed in these columns is now applied industrially by the Society for the Electrical Working of Metals. The pieces to be welded are placed upon a castron plate supported by an insulated at the castron plate supported by an insulated at the castron plate supported by an insulate of a source of content with an electric carbon inserted in an insulating with an electric carbon inserted in an insulating shadle. On drawing the point of the carbon posterior, the capton carbon insulating to operator of one are the circuit. He has then merely to raise the point slightly to produce a voltaic to raise the point slightly to produce a voltaic or whose high temperature metals the two voltains.

Sierra County Mining.

therefore it might be as well to omit their word "hoom" in this connection and, instead, state that the great industry (quartz mining, of course) of California is in a growing and prosperous condition in Sierra City district, Sierra Jouon y. si done that some that some that and is some that some that so of the ways of our the convenient of the cow-country people and the cow-country people are grootly to not run in just the same grootly and the convenient of the conv It is conceded by every fair-minded person, says the Sierra Tribune, that this district is enjoying a quartz-mining boom. That this is a heating and healthy boom there is not the shadow of a doubt. Indeed, on every hand,

perons and years' monderty (quentz minings, of county.

Jinis bealthy condition is a growing and prosecounty.

Out reston of colifornia is in a growing and prosecounty.

This bealthy condition of our mining interbut reston of a score and more of years.

In the pass taken a long time to convince people

but reston of a score but seeke is not the convince people

that the control of a core is the convince people

but reston of a score but seekes in the control of the convince people

occurry and the control of the convince people

working them cheaply this view of the question

opinion in this direction has been to fill of this work regards to the control of public

seasons go to prove. Within the last few converse and these prospectors have not is a set doing several mining coprocions have been of the converse of the

worked mpon, and we understand with good results in the tempts much with good results. More than in a double the best by more that in the said we understand with good relations in mine will turn out to be a by motor in pushing along the mining interests of this section. O. Sunderhens, who has the property bonds of the same up to clear the same up to clear where is going along just the same up at the clear, and the same up a tree centre and the same up to clear white same up to clear with a specific said of the same up to clear white same is a long said to clear way. Wilcox & Black, who are to have an underse mine has as a bright a theure before the and the structure, and will have it completed in the clear along facely with work on the structure, and will have it completed in the structure, and will have it completed in the clear to visit and inspect the from the mine right from the first drop of the structure, and will not be disappointed in their anticipations.

Jos. Hutchinson, count upon receiving the clear shape pointed in their anticipations.

Jos. Hutchinson, count upon receiving dividends them the structure, and will not be disappointed in their anticipations.

Jos. Hutchinson, count upon receiving the clear structure in the structure i

A GREAT AUSTRALIAN GOLD MUGGET.—At the invitation of Miless Alice Cornwall a private type in was made of the Mides gold nugget, the "L'Ady Loch" se it is called, after the wite of which wich with Ground or Victoria. The nugget, which weighs 617 ounces, or over 51 pounds, and is walled college, which is nearly 1000 acres Mileipg Co.'s claim, which is nearly 1000 acres in extent, on the 84 of August last at a depth in extent, on the 84 of August last at a depth where the "Lady Brassey" nugget was found where the "Lady Brassey" nugget was found two mouths previous. The laster "find," which way on moths previous. The laster "find," which prounds, was also exhibited by Miss Cornwall, weight also on the birdy Lock," which stands a lest of the birdy Lock on the right inches wide should be stander 14 on the list of States the Mides gold one foot long and eight inches wide, and is alter the stated that the Midas gold field has been opened up through the presential and the contract of Miss Cornwall, which we have the contract of the pend of the the Nidas gold-bird and the birdy of the presential and the contract of Miss Cornwall, which we have the most of the contract of the contract of the contract of the pend of the the Nidas gold-birdy and the contract of the contr

and regularity,

Columbus District.

Mount Diablo.—Walker Lake bulletin, Nov. GOOD ORE.—Walker Lake Bulletin, Nov. 23; The Durand staff is 29 feet down, and a north diff. The United Staff is 20 feet down, and a north and a north has been run so diff. from the bottom, which has been run so diff. from the bottom, which has been run so too, is being sacked for shipment, the remainder, too, is being sacked for shipment, the remainder, too, is being sacked for shipment, the remainder, which is half of the Del Down and the same been run as a count of water, but will be resumed as soon as account of water, but will be resumed as soon as account of water, but will be resumed as soon as account of water, but will be resumed as soon as a mothine shaft on the ledge, and was in very rich is an incline shaft on the ledge, and was in very rich is an incline shaft on the ledge, and was in very rich of such the same everally increased, shaft in the force of miners was recently increased, subting the sassays over \$800. The Antelope is still yielding good ore, this is defer the water of the bottom as a staff down 65 feet with a ledge in the bottom force of miners was recently increased, subting the gradually increased from three to six feet and base as a shaft down 65 feet with a ledge in the bottom force of miners was recently increased, subting the pronon of the Juniats, is owned by John Veidy. Barines and of the same everage size and vergade had not been above in the test of the bottom and of other of your subting the silght development that has a and of the same everage size and value, that has and of the same everage size and value, the present with the silght development that has been made, with the silght development that has been made, there is a large quantity of ore in sight and few and regularity.

#### Aurora District.

SEGREGATED BELCHER.—Have been occupied e past week in finishing the timbering of the 1300 vel rates, which work is now about completed. ANDES.—On the s40 level the north drift has sen advanced to feet. The face is in quants given dwarsarys.

city. Greatestery and the week have been engaged city. Scowrow,—During the week have been engaged in cutting drains, relaying tracks, and doing onth an eccessary work preparatory to drifting north and south on the vein on the tunnel—300 level, UTAH,—The north drift from the west end of east crosscout Mo. 6 has been extended 50 feet; total length, 6s feet. The formation is vein porphyry and free lines of quartz.

SEGREGATED BELCHER,—Have been occupied and the property of the

Bullion—The southwest detift from the main ist drift was advanced 25 feet; total distance 25, each earlier and use advanced 25 feet; ald distance, 214 feet. The face is in quartz and 27.

CROWN POINT.—The 500 level south drift has been cleaned out and repaired 45 feet, making a total distance of 345 feet, or within 60 feet of the south end. Over 635 tons of ore have been shipped HILLION TO THE PRILITING T

Belloher — A west crossout has been started from the end of the south drift on the 400 jevel. There are from 12 to 15 inches of water tunning from the top of the face. The Sutto tunnel drift is now out.

Yellow Jacket.—Are shipping 300 tons of ore daily to the troo daily to formed from the troo according to the constitution of the satisfactory in the mine, but the low stage of water in the river restricts the crushing capacity of the mills.

ALTA.—The mill is running night and day, and all the machinery is running anolhly. It cutables about 30 tons of ore daily, and the battery assays as high as any other mill on the lode. The ore comes from the eropes on the 72s and 1150 levels.

ALTHA AND EXCHEQUER.—West crosscut No. 1, on the 22s levels is advanced a total distract of 1, on the 22s levels is advanced a total distract of 1, on the 22s levels and the south drift on the 22s level is mown to 20 feet, and the south drift is in 30 feet in mown in 270 feet, and the south drift is in 30 feet. The north drift on the 22s level armoven on the 33s level to reach the face of the old drift, which was run a distance of 345 feet some 12 drift, on account of water, it was concluded to run around a portion of it.

Yellow 2, Alta March 2, Alta March 2, Alta March 2, one of this strong and 1, or 1, o ALTA. -The mill is running night and day, and

an over chuter, Arte flow diffusing the white flow the fact has been exceeded. Not so opposite east crosscut. No. 2 abas been exceeded 38 feet; total length, too feet. The flow extended 38 feet; total length, too feet. The flow is tended queric. The formation is porphyry and queric. On the typo level, 30 feet south of the crosscut k8 feet. The formation in the face is soft northern boundary line, have advanced an east crosscut k8 feet. The formation in the face is soft northern boundary line, have advanced as east experienced to the face is soft northern boundary line, have advanced as east northern boundary line, and leave the south of the soft 
with streaks of quarks.

Occident and a possible the cast crossout has alope below the upper turnel, the east crossout has alope below the upper turnel, the east crossout has conscout in the south drift has been extended at feet; ords, 53 feet. Have extracted to fons of milling rotals, 53 feet. Have extracted to fons of milling ords from this fevel on the seat crossout has been advanced of the winze, an east crossout has been advanced to the winze down from this fevel has connected with the uprashe from the level has connected with the uprashe from the order.

Are now this fevel has connected with the uprashe from the level has connected with the uprashe from the level has connected with the uprashe from the order.

Are now that we have the connected with the winze down to butter.

Best And Belicher, On the new level week level were alone the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the winze for the level were the connected with the work of the winze of the winze of the connected with the winze of th

drift has been extended 34 feet; total length, axo feet. This drift has passed through afreaks of one transfer in protryby. On the 42s level the east crosscut has been extended 33 feet; total length, 310 costs has been extended 32 feet; total length, 310 on the 700 level the south drift from the top of the total choices a been extended at length, 31 feet. This drift is in porphyty and quarts forms been extended at length, 32 feet. This drift is in protrybyty and quarts forms ton giving low assays. From the end of this drift have started crosscuts east and west. On the 1300 level the east crosscut has been extended 68 feet, with a crosscut and a promise and a control of the 1300 level the east oroscout has been extended 68 feet, with a crosscut and west. On the 1300 level the east oroscout has been extended 68 feet, and the east oroscout has been extended 68 feet, with a crosscut and west. On the 1300 level the east oroscout has been extended 68 feet, and the east oroscout has been extended 68 feet, with a crosscut has been extended 68 feet, on the 1300 level of 1300 level level or 1300 level on the 1300 level level or 1300 level

GOULD AND CURRY,-On the 300 level the north |

Where Course is an area for the Meanoe District.

SAVAGE, —Virginia Enterprise, Nov. 85: 50n the Soo level are stoping out ore from No. 2 crosscut, of the connect with the top of the connect with the time of the connect with the the conference of the state of the control of the shaft. Are extracting ore from No. 3 and No. the shaft, Are extracting ore from No. 3 and No. the stat crosscut in the south from the shaft on this level, where shower this level, On the yeal court north. On west crosscut. On the yealed are stoping ore, west crosscut. On the syo level are stoping ore, west crosscut. On the syo level are stoping ore, west crosscut. On the syo level are stoping ore, and also on the goo level. Have boisted dely tons of ore, and shipped toys tons to the Mexican mill.

#### Washoe District.

interesting the protection of the consequence of the control of th

DEADWOOD ITEMS.—Trinity Journal, Nov. 86;
The Brown Best Company are sinking a prospectng winze in the Last Chance mine; they are down
so feet on a 4-foot ledge of good rock; they will
sink the winze to a depth of about 50 feet, The
'raise'' in the Last Chance will be completed in

ENSTMAN GUICH.—Mr. Jas. Fisher of the Nob mine, Esstman gulch, has purchased the Venicia nine and mill; he has leased the mine and will run the mill with ore from the Nob mine. Mr. Fisher is a practical mining man, well acquainted with the locality, and will do well with his investments there. DEADWOOD PTEMS.—Trinity Journal, Nov. 56:

#### Trinity.

SCOTT BAR.—Yeeka Unton, Nov. 24: Mr. Shepberd has completed bits new mill on Quartz Hill, and blerd has completed bits new mill on Quartz Hill, Whitney & Co, have almost completed repairs on Whitney & Co, have almost completed repairs on the old San Jose dieb. They will start up operations in the old Whiting mine. This is a good paytone in the old Whiting mine. This is a good pay. Siver struck it rich last week, and it still continues to pay rich.

#### SISKILOT.

Mov. Sc. We learn things.—Mountain Messenger, Nov. Sc. We learn things graves and the country of the We well and integraved heavest of the didge nouth raise in the Arizona mine, located on the ridge north food of the Cornish Ranch House, on the Hennesse Passe Road, five miles east of Forest City. The tunnel goes in from Jim Crow Canyon, where there seems gravel having been found close to the edge of the gravel having been found close to the edge of the gravel having been found close to the edge of the hill, but in which there is no pay. Since then a tune through the R.M. Ex. Co.'s ground, and the channel tapped. This is the same lead that the channel tapped. This is the same lead that the channel tapped. This is the same lead that the channel tapped by the tunnel. The presons work and feet above the main tunnel, and only don't bork gravel diggings at Forest in the previous one, indicating that the lead will find be tapped by the tunnel and tunnel, and cold will bork gravel diggings at Forest in the old dough the Rain the close of pay the tapped by the tunnel channel work peets of all the dought well wells as taking the old dough well and the confort at the outlook at the Excelsior drift or several weeks and weeks all weeks and the forth gravel diggings, at Forest City, are reported as gravel diggings, at Forest City, are reported as taking out good pay to several weeks past.

Sishtyou.

Scort Bark.—Viela Usion, Now as No. Shep-

#### Sierra.

properties on the Divide. It is Tumored that a fair fliar, G.) Offer has been made for the Pioneer quarts mine near Damascus.

Plummes.

The mining prospects for this section are brighten-bright written, have been making prospects for this section are brighten based on the coolness and eliberation, and some people are previously written, have been making from the mining prospects for this section are brighten bright written, have been making from the mining ground, preparatory to the prospects of the coolness and eliberation, and some people have to one of the coolness and eliberation, and some people have to one of the coolness and eliberatory of the prospecting are going about the prospecting are going about the prospecting are going already the special of the coolness and already the ground about the mouth of the tumnel present the special of the tumnel present the special of the tumnel of the work-the prospecting are going already the ground fair of the work-the mine and the present the special of mean tight and day, and already the grounds about the mouth of the tumnel present the special of th

Townshill.—Cor, Placer Herald, Nov. 26:

Townshill.—Cor, Placer Herald, Nov. 26:

It is reported that the Horman drift mine at Wisconsin Hill has been sold to San Francisco explusives. Should this sale be consummated, it would enhiven things up considerably in this section. Morning Star, J. Molinier is building a large dump and sluices, preparatory to taking out the pay dump and sluices, preparatory to taking out the pay the Red Point mine, was in town Saunday last on his way to San Francisco. He showed two visits of bards, you offer the channel, which will be sent to bis way to San Francisco. He showed two visits of bards, the fact brint mine, was in town Saunday last on his way to San Francisco. He showed two visits of bards. The rich atthes at Ked Point mill surely gold taken from the channel, which will be sent to bis way to San Francisco. He showed two visits of the information of the star of the living was fair the Red Point will surely properties on the Divide. It is rumored that a fair mine near Damascous.

Plumes.

completed. They have been tested and found to work admirably. The sulphurets pay \$200 to the ton and there are about 400 tons on hand. The ten and there are about 400 tons on hand. The ten additional stamps are ready for operation and will be started up about the first of next month, the nill having been about about 30 feet. Very mill having been and and think in interface connections and put things generally in first. One-foot level and is now down about 30 feet. Very nich rock has been struck in stoping between the form of the ton. The cost of the new works is about to the ton. The cost of the new works is about abort of the ton. The cost of the new works is about abort of the ton. The cost of the new works is about abort to consideration, and also that the mine has cleared \$100,000 during the bast year or so, with only eight stamps, proves conclusively that the mine bas cleared \$100,000 during the best wind the best mines in the State.

HTE'S COVE.—Maripose Gazette, Nov. a6: G. M. Maripose Gazette, Nov. ab. G. M. Barley, a minet hinting in piper's Cover, Maripose Gazette, Nov. ab. M. M. Barley, a minet hinting in piper's Cover, and section. The Hite mine, leased to judge Walled; a section of the hinting in the construction of the big from the completed on the season of the complete of the big from the too-foot drift below and west of the big from the too-foot drift below and west of the big from the too-foot drift below and west of the big transity of the big man of the big staken of the big transity of the big man of the big staken of the completed with seld transity of the big transity of the big man of the big staken 
DEVERIDEE DISTRICT.—Into Interest Ight & References and Interest Ight & References and Interest Ight & References DISTRICT.—Into Index. Nov. 23: Mr. T. McDonough writes us from Beveridge District that he has just finished milling the last one of the season, and has closed down for the winter. The ore mer, and went all the way from \$50 to \$110 to the mer, and went all the way from \$50 to \$110 to the of practical minters, Beveridge District will come to the front, as there are plenty of mines which will pay the front, as there are plenty of mines which will pay handle front, as there are plenty of mines which will pay the front, as there are plenty of mines which will pay and worked.

GRUB GULCH.—Fresno Expositor, Nov. 23; W. GRUCH.—Fresno Expositor, Nov. 23; W. Violet of Fresno Flats came down to the city yesterday, and reporte verything tushing in and shout Grub Gulch. The Josephine mine, located and is showing up immensely rich. New and larger reduction works are being erected, and ores that have herefolore been sent below will now the control of the contr

## Fresno.

Amedor.

The New York Mive.—Amador Dispatch, Nov. 65: A new turnel is to be run into this mine a distance of 300 elet, about 50 elet of which has a line a distance of 300 elet, about 50 elet of which has a line a distance of 300 elet, about 50 elet of which has a line a distance of 300 elet, about 50 elet of which has a line a distance of 300 elet, about 50 elet of which has a very counsplieted, which will probably take three months.

Buttee and be completed, which will probably take and now he gets \$50,000, the second, \$31,000; the second \$31,00

## .TobamA

#### CALIFORNIA.

The following is mostly condensed from journals published the interior, in proximity to the mines mentioned.

pening in the central of they given they find a vision hap pening in the central's office, picked up a piece and found that it contained a small but rich streak of free gold unning through it. More attention was mashing out the quarts in a gold pan, and the way the colors were showing up indicates that the quarts is very rich. A force of men will be employed on the claim in the spring. Boy, the extension of the Whale on being done, Several tons of ewill be shipped to dountain. The vein is as feet wide, has assured the position of manager at Cypsy thich trues vertices, some specimens of the control 
DAKOTA.

LEACHING PROCESS AGAIN.—After an absence of several months, Perry Ankeny returned to Desedwood Wednesday afternoon. Mr. Ankeny followed Professor R. D. Clark brown to S. In Tennovoo. and Professor R. D. Clark brown to S. In Tennovoo. and Professor R. D. Clark brown to S. In Tennovoo. and the second Measure and Professor R. D. Clark brown by M. D. Baid Mountain ores, lately made there were always and more to build be successed a doubt, result in such vast benefit to the Black Hills at large, sand white wall, with the successor of the successor of the experiments with Mr. Ankeny by a Floncer representative, and promise, and more perinently of the district maned and more perinently of the clarken promise. After leaving San Francisco Mr. Ankeny by the fourty massed believed to the successor of the experiments in the more secondariated Professor Clark to his works at Cortex, Miere further experiments, with mough and complete successor of the experiments in the more secured in the state made. After leaving San Francisco Mr. Ankeny by and translered to the more layer more secure, where further experiments, with much more works, where further experiments, with mough more more secures with a for secure, with much more secures will be slad under ground from the belief or seal of the position of the continuous and recessary to run the hoising works, where they will be used for the generation of more seally run with the power turnished by the mill on Works or the sake in the to results, were made. After the more seal house or or name to remand the course, with noting a passacus on not and when on more seally run with the power turnished by the mill bough what the established the position is the companing and established the position of the seal future to resp a trich handling to the dismond the belief to restar downleng the establing the milling on the accordance of the conditions. The company is still working three sets of the seal future to resp a trich handleng to the set of the second determination of the cond

The slopes are tooking there, and tuning and right.

NORTH BELLE JSLE.—Stopes above the 150-foot level continue to look well at all points. Interested date level north and south from No. 3 wince has the extended so and as feet, yielding good ore to develop a strong vein of high-grade ore. No. 3 forescent east, 70-foot level, shows a width of about of elect of vein, and several strain of high-grade ore. If the mill was closed down for one day the past week to clean boiler, otherwise the usual grade and quantity of ore has been milled.

thy of ote has been milled, he work been contained as the contrary, and the contrary of the contrary of the contrary of the contrary of the contrary. The Howard mine, make the days, is student on the contrary of the contraint groves and sold to the grad to the contrary of the contraint groves of the shaft, estimated to the worth, penhaps, and the dump, and the contrary of the contraint groves and belong to the contraint and the contrary of the contraint groves and belong the contraint and the contrary of 
Connor, ye tons; Orlensia & Belmont, 88 lons; and the Members, c tons.

Garfield Discrice.

Moke Stables—Walker Lake Bullstin, Nov. 23: The work of receing the fore new stamps is properly as a second of receing the fore new stamps is properly as a second of receing the fore new stamps is properly as a second of receing the fore new stamps is properly as a second of the bullsting of the bolies almost immediately. Differ sie set work on the record, and will commence the citing of the bolies almost immediately. Differ sie set work on the record, and will commence the citing of the bolies almost immediately. Differ sie delife on the cloud of the Maverton of the Landon to the May of the Landon desire, which is the deepers two feet which the bacon in the company, the prospects indicate a good mine. In a pany, the prospects indicate a good mine. In a language of the company, the company of the compan

Harrison Brothers are busy developing their mine, ship salver bullers are busy developing their mine, ship salver buller training results. They will soon produce and she buller 
Octobed Ontes Districts.

A PROSITABLE MINE.—Burcks Sentined, Nov. Gortes Districts.

Sof. The Carrison mine and mila at Cortes we been in enting from 25,0000 to 540,000 per month. The mill is not in full overation at present, owing to a mill is not in full overation at present, owing to a mill of water, her take a mersal mill to its full capacity.

ORE SHIPMENTS.—Burcks Sentined, Nov. 26: The mill to its full capacity.

Mill to its full capacity.

ORE SHIPMENTS.—Burcks Sentined, Nov. 36: Them in the mines of the district to the Richmond works—the mines of the district to the Richmond works—from the Seventy-six mine, I ton: Alexandria, 6 tons; Godes & Bertrand, 39 tons; Diamond, a tons; Whippoorwill, 33 tons; Diamond, a foors; Godes & Bertrand, 39 tons; Diamond, a tons; Whippoorwill, 33 tons; Diamond, a tons; Whippoorwill, 33 tons; Diamond, a tons; Godes & Bertrand, 39 tons; Diamond, a tons; Godes & Bertrand, 39 tons; Diamond, a so tons; Cons. Cons. Shippoorwill, 32 tons; Branch & Molino, 10 tons; Diamond, 40 tons; Given, 5 tons; Diamond, 40 tons; Given, 5 tons; Diamond, 50 t

Gomo Dietrice.

HAULING ROCK.—Lyon Co. Times, Nov. 86:
During the week Randall's team has bauled two
Boads of trock from the Yorth Spatian mine; in
Como, to the Rock Point onlil at this place, More
rock will be hauled to the same mill from the Buckspout the first of the month. The tock looks very
well, and that from the Buckeye is said to assay in
the neighborhood of \$40 per ton.

Corres Dietrick

Oortes Dietrick
A Prostrable Mire, -Eureka Sentinel, Nov.

The south crosscut from the seaf diff, on the feedball, on the feedball, on the seaf diff, on the feedball seed is and the formation more seaf diff is in a set feet. The north crosscut from the west stand shows a small streak of \$40 ore. The south crosscut from the west between the fully and striple feetball seeds and shows a small streak of \$40 ore. The south seeds are looking well in the feetball seeds and shows a small streak of \$40 ore. The south seeds are looking well in the feetball seeds are showning. The west shows the feetball seeds are showning. The west stand shows some chloride ore.

Are and of the stope. The stope ore a powing. The stope ore, but have in the feetball shows the stope of \$40 of \$

The HALL THREAL Coorging of the surface, how a contract of the 
.ANATNOM

sinspe.

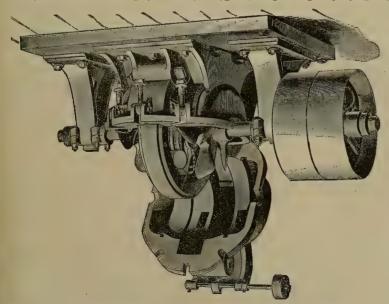
SUCKER CREEK.—MoLaughlin & Crabtree are
SUCKER cheir tunnel in steadily, and although they
do nor claim to have old Corty-nine diggings they do
ing good headway with their incline. Thompson
ing good prospect on the Read hill, east
side of Sucker oreek,

ALTHOUSE.—Cor. Grant's Pass Courier, Nov. 25: Hogdon and Spangle of Walker gulch bave got their claim in good shape for a good season's run. The ground prospects well. The Johnson Bross, with L. Melson, have lessed a piece of ground from C. H. Beach, which they have fixed up in good shape.

OFEGON.

MORNING STAR.—Idaho Avalanche, Now. 19;
We best that fine ore bas been tound in the old working shaft of the Morning Star mine, which is working stalf of the Morning Star mine, which is expected, as all the old residents of this ore is not uncapeuted, as all the old residents of this open declared the mine, we found the mill running on ore from the company's mine, and doing good work. Bitch ore mone found the mill running on ore from the stale found the Morning Star mine, which is has been found the mill speed work. Bitch ore non-parable found to the Morning Star mine, which is the Morning Star mine, which is the Morning Star mine, which is the mine, in Chutcher menced, or rather the hotsing of water having beneated from the sixth ewill tun two levels on the mine, on Thurds, which is the will fin two levels on the mine, on the mine mine, the will stope them the sixth he will tun two levels on the mine, and the starth he will the will stope that the sixth he will the will stope that the sixth he will stope the will the starth evel toward the surface, and take out a good crushing.

# CENTRIFUGAL ROLLER MILL EFISBEE-LUCOP MILL,



most rapidly and economically. Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Gement Rock, and other

All substances when ground leave the mill in a finished state—no regrinding being necessary. Auton Reed, Wearing parts of Steel and Forged Iron.

BLAST AND SCREEN MILLS,

EHISBEE-FIGOD MILL COMPY

HOOKER & LAWRENCE, General Agents,

145 BROADWAY, NEW YORK.

ENCINES And 461 Howard St., San Francisco, where a Mill can be seen in operation and orwill be reduced at reasonable rates.

Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link

**FOR MINES.** 

LIDGERWOOD MYF'G COMPANY,

PACIFIC COAST AGENTS, 96 Liberty St., New York.

PARKE, LACY & CO.



CALIFORNIA WINE COOPERAGE CO., WATER TANKS, WINE TANKS!

FULDA BROS., Proprietors,

SO to 40 Speat St, San France, Tanks, Etc. San Francisco.

Mechanical Photographers, RUNNELS & STATELER,

Machinery, Models and Buildings 957 Market St., San Francisco. Views of

Betablished 1856. San Francisco Cordage Factory.

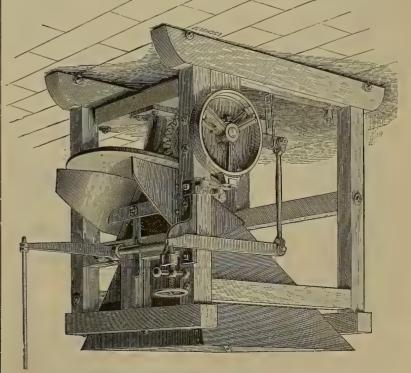
611 and 613 Front St., San Francisco. TUBBS & CO. Constantly on hand a full assortment of Manila Bope, as Kope, Tarred Manila Kope, Hay Rone, Whale on, etc., etc.
Extra sizes and lengths made to order on short notice

Golden State and Miners' Iron Works

gay First Street, San Francisco, Cal. Sole Manufacturers,

10SHOV HENDY MACHINE WORKS

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



"HENDA" IMPROVED "OLALLENGE" ORE FEEDER,

superior to any form of "Roller" Feeder manufactured. We refer to the follow-ing gentlemen who have furnished us with testimonial letters to the above effect, which can be seen at our office, viz.: The best form of Feeder ever devised, and pronounced by reputable mining men to be far

A. W. CROCKER, Supt. Bunker Hill Gold Min. D. C. Wickham, Taylor Mine, Greenwood, Cal, ing Co., Amador City, Cal.
W. G. Robertz, Greenwood, El Dorado Co., Cal.

CHALLENGE," "STANFORD," "TULLOCK," & "ROLLER" FEEDERS WE ARE MANUFACTURERS OF THE

And will furnish descriptive Catalogues and quote prices upon application.

N. W. Corner Main and Howard Sts., San Francisco, IBON MOBKS

Stationary and Compound Engines, Flour, Sugar, Saw

AMALGAMATING MACHINES. CASTINGS AND FORGINGS OF EVERTORION and Quartz Mill Machinery.

IMPROVED PORTABLE HOISTING ENGINES.

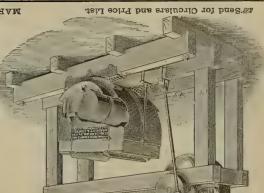
NATIONAL ROCKER QUARTZ MILL

CAPACITY, 12 Tons in 24 Hours, 3 H. P. MARSHUTZ & CANTRELL, Sole Manufacturers.

A. The power to drive itseless than
A. The power to drive itseless than
one-half of the wear is less than one-quarfor The wear is less than one-quarted wear is less to wear except on
the poly a no wear except one
aboes and dies.
A in point of amelgament in selectine
in use,
in use,
in itselection to construction.
S. In its simplicity of construction.
We have conservation with

other ore crushing machines
before the public.

MARSHUTZ & CANTRELL.



IRON CASTINGS of all descriptions. AND RAILROAD CASTINGS. MHEELS CHILLED CAR

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

# Metallurgy and Ores.

## SWELTING and LEAD CO. **SETBA**

**COLD AND SILVER REFINERY** 416 Montgomery St., San Francisco.

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets. And Assay Office.

BLUESTONE,

LEAD PIPE,

SHEET LEAD,

Standard Shot-Gun Cartridges,

SHOT, Etc., Etc.

JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

CHEMICAL APPARATUS AND CHEMICALS, DRUG

114-118 Pine Street, - San Francisco.

polication.

1.5. Our Gold and Silvet Tables, showing the value per une of Trop and Trop and Trop and Trop and Trop at Ufficient degrees of finoneses, and valuable these of most property and transport of season to make of the total and the transport of the transport of transpor

NO. 23 STEVENSON STREET, Meet First and Market Streets, S. F. Nevada Metallurgical Works,

Ores Sampled, Огез worked by any Process.

Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications furnished for the
most suitable Process for Working Ores.
Special attention and to Exeminations Assaying in all 1ts Branches.

Special attention paid to Examinations

Mines; Plans and Reports furnished,
O. A. LUCKHARDT & OO.,
(Formorly Hulin & Luckhardt, )
Mining Engineers and Metallurgiets

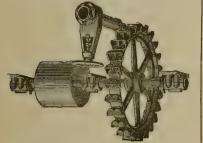
METALLURGICAL 818

S18 Pine St. (Basement, corner of Leidesdorff Street, corner of Le

Assaying and Analysis of Ores, Minerals and Wateret.
Mines Examined and Reported on.
Treating Ores by im
roved processes.

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL.



THIS WAS ONE OF THE FOUR WHEELS TESTED A bol label of Company at Casis, and for the veve 90 % per cent., distancing all competitives. Send followed and guaranteed estimates.

ABRIE & LACY, SI and 28 Fremont Street San Francisco, Cal.

INVENTORS, TAKE NOTICE!

268 Market St., N. E. cor. Front (up stairs), San Francisco Experiments! machinery and all kinds of metal, tin copper and brass. L. PETERSON, MODEL MAKER,

> QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE TA

ligs and TROMMELS.

HOISTING

COBNISH BOLLS, FRASER & CHALMERS,

ENCINEZ AND BOICEBZ'

-bael ni nortereqo ni al

This Mill as a Crusher and Pul-veriver is without rival.

STURTEVANT MILL.

, 29 M U 9

M ACHINERY,

CORNIZH

**ENCINE2** 

PUMPING

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

HALLIDIE'S

UTAH OFFICE-SALT LAKE OITY, UTAH.

Room 48, No. 3 Wall Street. NEW YORK OFFICE: GENERAL OFFICE AND WORKS: Fulton and Union Streets, Obicago, III.

# Mining Turbine Water Wheel, JAMES LEFFEL'S

These Wheels are designed for all purposes where limited quantities of water and high heals are unliked, and ere garanteed to great more power with less water than any other wheel made, Being placed on applicabing with greating.

Estimates turnibed on application for wheels specially built and adapted in Estimates turnibed on application for wheels specially built and adapted in Estimates turnibed on application for wheels specially built and adapted in Further information can be obtained of this form of construction, as well as the ordinary Vertical Turbines for Wooden Penstocks and in Iron Globe Cases, Iree of cost, by applying to the manufacturers.

MEXIOO OFFICE; No. 11 Oalle de Juarez, Ohlhuahua, Mexico.

DENVER OFFICE:
No. 248 Eighteenth Street, Denver, Colorado.

1AMES LEFFEL & CO.,

or 110 Liberty St., Mew York.

TRAMWAYS,

ENCINES

MIKE ROPE

Springfield, Ohio,

FRASER & CHALMERS, General Agents,
Chicago, Ill., and Denver, Col.

PARKE & LACY, General Agents, San Francisco, Cal.

COLD MINERS

Quartz, Gravel and Placer Mines!

**AMALGAMATING** Silver-Plated

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded.

These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in Old Mining Plates Bought, Replated, or Gold Separated. Over 3000 Orders Filled.

Assayers' and Mining Material, 112 to 118 Pine Street.

San Francisco Gold, Silver & Nickel Plating Works,

ees and ees mission st., san francisco, cal.

e G. Denniston, Proprietor.

REMD FOR CIRCULAR.

MOLICE.—My Silver-Piated Plates are well known and used everywhere. They have proved superior to all others in durability

THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

One door from & \$1. 1 25 Free San Francisco m Bank of Cal.

American Exchange Hotel,

OHAS. & WM. MONTGOMERY, Prop'ra,

### MINING SHAREHOLDERS' DIRECTORY,

COMPLED STRET THURSDAY FROM ADVERTISEMENTS IN MINING AND SCIENTIFIC PRESS AND OTHER S. F. JOURNALS

NAME OF COMPARY. DOATION. BEORETARIN—WITHIN THRESH MONTHAS.  NAME OF COMPARY. DOATION. BEORETARIN—WITHIN THRESH MONTHON.  OG OF STATEMEN STATEMEN. DOATION. BEORETARIN.  OD California & Va. M. C. O.
Succer Con M Co.,
Dett. (18 de 18 de
NAME OF COMPANY. LOCATION, SECRETARY, OFFICE IN S. F. MEETING DATF.
WEELINGS TO BE HELD.
Achienge of Genick Company No. Achienge of Selvan Strake Strakes Strak
ASSESSMENTS.
Dulking VSERSEV

Stock Exchang	san Francisco	ts soled at	i səls2 teəi	fgiH bas	of Lowest
Hale & Mor	1 Dec. 1, 1887, 1775 I	THURSDHT 600			S. F. Stoo
Tuetice		shqlA 06	Haam Haam	Zaulk Z	at a

HOHEOR	ш	MEINSSESS V
Yellow Jacket	nez	285 Gould & Curry52
09.2	924	og fr
Union Con, 4.10	C97	200 Dudley
Scorpion noigross	007	Of Confidence10
Sierra Mevada	250	200 Con. Pacific 20c
Silver Hill65c	900	100 Challenge 3.00
Savage84		100 Сгоскет85с
3071994	200	100 Caledonia75c
Potosi Potosi	046	100 Con Va & Onl
Overman, S.15 Occidental	3:0	59 ratiodO 062
\$SItin(qO	150	200 Bodie Con 8.60
Мет. Queen 3 30	OCT	68.6notubel 06
N. Belle Is 8	07	200 Baltimore1.00
Mexical	00₹	fol Belcher10å
Lady Wash Tro	097	ZZO E. & Belcher88
արևու	09	30.2snqlA 0e
Ud. I J. 50	360	co.f
5000 вугод		
189 & MorToM & elsH	2771	THURSDAY Dec. 1, 1887. ;1
שבחת הענוומווצם	00	DOLOS SE DEL T L'ALLOS
Stonk Hyphanic	UU	Sales at San Francis

## SPECIAL MEETING.

ing Company. South Comstock Consolidated Silver Min-

A special meeting of the Slockholders of the South Consects Conscioted Consolidated Silves Mining Company vol. 39 California, belief at the office of the Company, vol. 399 California, the Street, round, 4, Sar Farne co., California, on Mondar, the Sist day of November, 1837, at the about of 2 ° clock the gruppes of the graph of the constitution of 3 ° p. at. By order of the Propest of the California 
## LITTLE CAPITAL. A VERY GOOD PROSPECT FOR

A MINE IN EL DORADO COUNTY.

Has first-class blothing works, capable of sinking works, capable of sinking works. Shaft siready down 300 leste and tunnels started. Excoyable arrangements for an interest can be made and full particulars given by the made with the sinking works.

ISRAEL W. KNOX, Jolden State and Miners' Iron Works, SST First Street, S. F.

## DOWNIE EUCALYPTUS

# BOILER SCALE

PREVENTIVE AND REMOVER

U. S. Wavy, Pacific Coast S. S. Co., out no osu ni

Market St. Cable Railway, Standard Oil Company, Cal. Sugar Refinery, Htc.

DOMNIE B. I. P. CO.

SEND FOR CATALOGUES. 204 MARKET ST., SAN FRANCISCO.

Sporthand, Typewriting, Penmanship, Bookkeeping COLLEGE, Send for Chroller S. P. Send for Chroller

Complimentary Samples. The mining companies with offices in this city paid in dividends last month \$177,500, which is a larger sum than any other form of company paid.

The strock market has been rather sctive this week. The Virginia Chronicle says: "The week. The Virginia Chronicle says: "The Hale and Morerosa new ore development is in the Chollar line, assays from which are said to chollar line, assays from which are said to prove a value of \$300 per ton in gold. This show a value of \$300 per ton in gold. This prices up. The rise in the Carson river will each crown Point, Beloher, Yellow Jacket prices up. The rise in the Carson river will each crown brother productive elaims to greatly increase and other productive elaims to greatly increase and other productive elaims to greatly increase some very large bullion spied. From the Consolidated send the Carson river will processe send to the Carson river will processe as the rise in the Carson river will permit of more ore being crushed. A dividend will probably be declared Dec. 10th, ably be declared Dec. 10th."

Mining Share Market.

00.7 53 83 61.2 01.2 50.2 00.1 31.1 00.1 35. 87. 00.2 31.2 30.3

иол. 10. иол. 17. иол. 23. Dec. 1.

\$8 00.8 02.8 00.8 82.9 87.8 01.

Persons receiving this paper marked are re-quested to examine its contents, terms of sub-scription, and give it their own patronage, and, as far as practicable, aid in circulating the Journal, and making its value more widely tenown to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

## New Incorporations.

The following companies have been incorporated, and papers filed in the office of the Superior Contra Department In San Francisco.

Coxquerror, Mev. Capital stock, \$500,000.

Juccarora, Mev. Capital Stock, \$500,000.

OTHOR.

STOCKTON & TULKER B., R. O., Mov. 29th.

STOCKTON & TULKER B., R. O., Mov. 29th.

STOCKTON & TULKER B., R. O., Mov. 29th.

Stanford, Chas. F. Crocker, Timothy Hopking,
W. V. Hunkington and W. E., Brown. The
The Toad is to turn through the Stanislars,
and enting at the town of Oakdale, in Stanislars,
and enting at the town of Oakdale, in Stanislars,
The road is to be connected with the Central
Paolifo by five branches, the first the Central
mence at Modesto and run to the main line,
the third at Sycamore, in Fresno county,
ine; the third at Sycamore, in Fresno county,
line; and the fifth at Tulare, and connect with
line; and the fifth at Tulare, and connect with
line; and the fifth at Tulare, and connect with
set instant line at a scan series. The
samples Carles of the road and its branches is
Stommars.

Stommars of angels of the road and its branches is
Stommars.

Omurlang.

Omurlang.

Omurlang.

Worthy of special mention:

DAL LOCK.—Charles H. Vite, S. 18, 70.

373,702. Dated Nov. 22, 1887. This consists of an adapted to be dadapted to be datable frame or bed adapted to be fitted and tightened on the gunwale of the boat, of the shaft pivoted to said bed-frame, a two-part hinged socket to brive and at two-part pinged socket brings here and a two-part bringed socked to bring the socket and adapted to turn therein as a journal. The object is to provide an acceptance of the oat may be turn the sort of the car may be transity in the oat may be writen the oat may be transity in the oat may be transity in the oat may be transity in the oat may be writen and which will permit of its various movements without hindrance, said oat-lock being adapted to be tastily applied to to see place. owen by the other of the street of miles.

OMATRIES CARLE CO., Nov. 29th. Capital check, \$2,000,000,000. Directors—W. E. Sell, Geo. Lowenburg, Chas. Sufro, E. H. Lloyd and W. S. Wood.

Dy the cable system to commence at the corner of Howard and East, and running thence along of Howard attect to Army street; also commencing Homer dattect to Army street; also commencing on Townsend to Third, to Market, to Monktomery.

Townsend to Third, to Market, to Monktomery.

Townsend to Third, to Market, to Monktomery, and to North Besoh by the same route now followed by the old Omnibus company. It is the intention of the new corporation to run cable intention of the new corporation to run cable case over all their to id routes as well as the sevinal transfer over all their to defect the own followed by the old Viewell sevinal their the lines now in operation and the premater of the sevinal series over all sines in length.

Stregate 30 miles in length.

Bullion Shipments. Dewey & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are worthy of special mention: Among the patents recently obtained through VOTE.—Copies of U. S. and Poreign Peasents uturalshed by Dwark of oil, in the shortest time possible (by mall of telegraphic order). Amendon and Poreign patents to telegraphic order), and reserve pleases for Pacific Society and Centerla pleases to Pacific Society inventors transaction with perfect security, at reasonable inventors transaction with pease of the please of the ple

## Bullion Shipments.

San Francisco Metal Market,

	_		
_	(O)	68	Flasks, old
_	ത	-90	Flasks, new
00	രത്	ão	COLORAL VERSON BUILDING BASE STATISTON OF ST
	350	uu	Ouicesilver—By the fissk37
52	4 8	94	TINTLATE—Coke.
90	9 0	94	TIMPLATE-Coke
91	(0)	0L	Maylor & Co
	(i)	řŧ.	Machinery
g	മ്മി	44	Plow.
_	m	č	Black Diamond, ordinary sizes
OFF	8	0	The Language and income of the language of the
25	8	91	STEEL-English, fb.
	w)	20	Ohilled, do
-	0	00	Buck, & bag.
_	20	08	Shot, discount 10% on 500 bag. Drop, # bag. 1
	Ø)	8	Shot, discount 10% on 500 bag Drop, 78 bag. I
94	90	09	
74	" Ď		DEAD—Pig.
	8	00	TOTAL CONTROL OF THE PROPERTY
_	. 🐑	00	Shotts, Wo. 1
_	(0)	98	SS Office White
00	(623	00	Oregon Pig, bon.
m	(4.35	-	American Soft, No, I, ton
00	87.0		Eglinton, ton
ññ	@30	_	IRON-Glengarnook ton
		0.	Fire Box Sheets
EI.	(0)	61	
139	0	213	
_	<b>(</b> 0)	6T	Sheathing
12	(0)	6I	Bolt
		-	COPPER—
<b>1</b> 9	0	α	Armagosa
1	æ.	TO	POKYY—Dan being must have Avion
2	<b>B</b>	0.0	Autimony—French StarBorax—San Bernardino
-	(0)	86	Augustinous Star
- 1	1887	Ι.	THURSDAY, Dec.
			WHOLESALE,

## New York Metal Market.

Telegraphic advices dated Dec. 1st give the following New York prices:

New York prices:

Borax—246.60 per 0z.

Borax—40.1, 522 00.

IRON—30.1, 522 00.

IRON—30.1, 522 00.

IRON—30.1, 522 00.

The prices — 150 per 0z.

IRON—30.1, 522 00.

The prices — 150 per 0z.

The price of 0z.

T

# Don't Fail to Write. name are foreigned in the other of the state of the order of the other othe

F., assignor to holdph Weste, No. 378,761. Dated (No. 28, 1887. The invention relates to certain inprovements in electric-arc lamps, in certain inprovements in electric-arc lamps, in which the adjustment of the earbons is effected of unrents of unreads of solenoids with electrical currents of unaqual resistance; and it consists of certain novel devices by which the exponse are autonovel devices by which the exponse are autonovel devices by which the exponse are autonovel devices by which the unequal resistance of the matically adjusted to produce the proper arc, a solenoids by which the unequal resistance of the circuit in case of accident. The invention further two is utilitied to cut automatic stop and releasing neckalism whereby the carbons of a double lamp are brought into the circuit so as to burn successively and continuously.

Intector Perdonance Greeg W. Wiswell, S. R. No. 373,710. Dated Mov. 22, 1887. This feed-cook for injectors consists of a single cock or valve having passages whereby the steam and water inlets may be simultaneously opened by one movement of the cock, said cock, asid cocks the passages are ping controlled so as to operate and is the apparatus. By the peculiar consistency to open the cocks or valves so as is necessary to open the cocks or valves so as and as the passages are properly proportioned, and as the passage are properly and as the passage are properly proportioned, and as the passage are passage are passage. The passage are passag

INJECTOR FEED COCK. -Gregg W. Wiswell,

Notices of Recent Patents.

Where, S. F. A. 373,710. —IMJECTOR FEED-COCK—Gregg W. Wisship, S. F. T. 1888. —Design for Violin—David K. Darby-Cal. Cal.

Wiese, S. F. ELECTRIG-ARC LAMP-Gustav A.

S73.715. — Comeined Scale Mersure And Sys.715. — Comeined Scale Mersure And Spirit-Level.—Thomas H. Bates, Pasadena, Cal. 373.62. — Conformation for Thumes—John H. Grener, Stockion, Cal. (State of State of

FOR WEEK ENDING NOVEMBER 22, 1887.

From the official report of U. S. Patents in Duwar & Co.'s Patent Office Library, 220 Market St., S. F. Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific States. Inventors.

List of U. S. Patents for Pacific Coast

Our Agentes,

Our Agentes,

Our Parkings can do much in aid of our paper and the
cause of practical/knowledge and science, by assisting
theore and encouraging theore. We intend to send none
duence and encouraging theore. We intend to send none
theore and encouraging theore.

Jaser C. Hone—California.

Jaser C. Hone—California.

G.W. Hourne—State Africana.

W. Hurtan Pool—Fresno Co.

W. W. White Moore—Fresno Co.

E. F. Shurne—Wachington Ter.

E. F. Shurne—Wachington Ter.

E. F. Shurne—Wachington Ter.

E. H. Shurne—Thiare Co.

I. Shurne—Machington Ter.

E. H. Shurne—Machington Ter.

E. H. Shurne—Machington Ter.

E. H. Shurne—Machington Ter.

E. H. Shurne—State California and Stanishaus Co.

E. H. Shurne—Machington Ter.

E. H. Shurne—Machington Ter.

C. E. Willians—Africana.

C. E. Willians—Africana. should this paper be received by any subscriber who can be received by any subscriber who can be seen that the order of the costing one of the case of



# ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Receite Notors, Dynamos, Trancars, Elevators, Signals and all kinds of Electrical Systems for lighting and wission of power, sither alrect or with storage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

nly complete and satisfactory incandescent system. Lights require no attention and are unider your 600,000 light in use in the United States SELF-RECULATING ARC LIGHTS turn you and earling the whole 2s hours; invaluable to contractors and others to we are an others to we have an other some of which the properties of the second of the properties of the EDISON INCANDESCENT LIGHT,

## Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

# THE GIVNT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

## CIVAL BOWDER OF DYNAMITE,

NOBEL'S EXPLOSIVE GELATINE," which contains 94 per cent of Ultro-Clycerine, and GELATINE, Stronger than Dynamite and even baler in Handling.

## 10DSON FOWDER IMPROVED.

FOR EALLEROADS AND EAMO Grave! Cleare! Conditions there to four times stronger than reliced better and times and times better the strongly pullerizes better and times as treely.

## BYNDWYNN' MIETSEN & CO.

## No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

### ("DYNAMITE" of "GIAUT") NILKO GIL K CEKINE

## Vigorit "LOW" Powder, Blasting Powders.

FOR REMOVING STUMPS AND TREES,

WORKS: California City, Marin Co., Cal.

ED' G' LUKENS, Manager.

#### PATENT

# LIFE-SAVING RESPIRATOR

Entirely Prevents Lead Poisoning

JOHN TAYLOR & CO., Sole Agents, 114 to 118 Pine St., San Francisc

## W. T. WENZELL,

Analytical & Consulting Chemist,

Opposite Second St., San Francisco, Call. Careties and careful assistances, today, makes of precisions, sois, waters, foods, medicines, industrial products, poisons, etc., Correspondence solicited. 532 Market Street



S Triumph Concentrators. I New 12-inch, 35 H. P. Engine, 1 Vew 18-inch, 35 H. P. Engine,

130 Sansonie Sk., room 12, Back Firks of the Minne And Scientiff of the Minne And Scientiff of the Worker of the months. Per type (two volumes) Sb. Inserted in Dewey's patent binding to the Company of the Minne of



Sons, and we cantion the Public to see hat the Trade Mark "H, H, H, H," is on yeary liattle before purchasing. For sale

For Sale by all druggists.

# **MINCHEZIER HONZE**

San Francisco, Cal

44 Third Street,

This Fire-proof Prick Building is centrally located, in the healthiest part of the city, only a half block from the Grand and Felace Hotels, and close to all Steamboat and Railroad Offices.

Laundry Free for the use of Families HOT AND COLD BATHS FREE.

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE.

JOHN T. SULLIVAN,

20 Fourth St., Pioneer Building

Boot and Shoe Maker.

Maker of the famous Miners' Shoe

Goods sent by mail or express.

BY AUG. J. BOWIE, JR. Practical Treatise on Hydraulic Mining.



# SUTRO TUNNEL COMPANY

SLOCKHUIDERS OF THE SUIRO TUNNEL COM-

PELHAM W. AMES, Secretary.

HORACE D. RANLETT,

# Ores, Mining, and Commission,

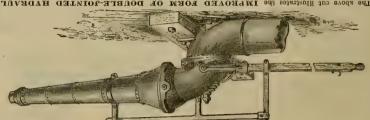
420 Montgomery St., S. F.

UNION COPPER MINE, Calaveras Co.
NEWTON COPPER MINE, Amedor Co.
Correspondent as Agent for Smolters in London, Liver
proof, New York, Boston and Baltimore.
Twenty,



California Inventors Dewe Elector

#### HYDRAULIC GIANTS. 0Ł **FORM** IMPROVED



JOSHUA RENDY MACHINE WORKS, 39 to 51 Fremont St., San Francisco, Cal



# Iron and Machine Works.

MW. H. BIRCH & CO., CALIFORNIA MACHINE WORKS,

ENGINEERS AND MACHINISTS,
No. 119 Besig St., - Sen Franci
--- Buller of Proper y Proper

Brodie Rock Crushers, Steam Power, Hydraulic, Side Walk and Hand-Power Steam Englnee, Flour Mill, Mining, Saw Mill and Brodie Rock Cruahere.

Manufacturers of B. E. Henrickson's Patent Automatic stety Catches for Elevators. All kinds of machinery ade and repaired. ATORDERS Sourciven. ELEVATORS.

## Golden State & Miners Iron Works,

Manufacture from Castings and Machinery of all Kinds at Greatly Reduced Bates.

STEVENSON'S PATENT

Mold-Board AMALGAMATORS,

Golden State Pressure Blowers.

first St., between Howard & Folsom, Sta

SACRAMENTO, CAL. DNION IBON MOBKE

ROOT, NEILSON & OO.,

MACHINERY FOR MINING PURPOSES. Engines, Boilers, Steam

Flouring Mills, Savy Mills and Quartz Mills Machi constructed, fitted up and repaired.

ENKEKA FOUNDRY THOMPSON BROTHERS,

жамирастивева оу олятинев оу купру револитиом. d 131 Beale St., between Mission and Howar

or E. ORTON.

VY-HILLERMS & OTTON.
MANUE''NS UF CENERAL MACHINERY.
Worke, No. 315 Mission 8t., San Francisco.
Special aftention given to Woodworking Machinery.
Steam and Cas Engines. Correspondence solicited.

MINING ENGINEERS.

Civil and Mining Engineer, W. A. GOODYEAR,

Address "Business Box A," office of this paper, Sa MINING EXPERT AND GEOLOGIST.

FORR E BROMNE'

Mining and Hydraulic Engineer,

NO. 307 SANSOME ST., SAN FRANCISCO.

SAW COMPANY N. W. SPAULDING

SPAULDING'S Manufacturers of

inserted Tooth

CHISEL BIT

CIRCULAR

SWES

I's and 19 Fremont St., San Francisco. GAW MILLS AND MACHINERY



# SHIPPING AND COMMISSION MERCHANTS,

309 and 311 Sansome Street, San Francisco, Cal.
Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents
for the Mexican Phosphate and Sulphur Company's Products.
General maurance Agents.

General Agents for the Pacific Cosst of WATIOWAL ASSURANCE CO., of Ireland; ATLAS ASSUBANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass

PACIFIC ROLLING MILL CO.

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Oast or Wrought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from ‡ to 3 incin diameter and Flats from I to 8 inch. Angles, Tees, Ohannels and other shades when the Wagon, Burgy, and thered it o sis and longths Beams, Angle, Ohannel, and I from I to 6 pounds por yard. ALSO, Railroad and Merchart Iron, Fridge and Mancinney bolis, Lak Steway, Nuts, Washers, Ship and Boat Spines; Reamboat Shaffs, Cranks, Pistons, Connecding Rods, etc. Car and Locomotive Axles and Boat Spines; Reamboat Shaffs, Cranks, Pistons, Connecding Rods, etc. Car and Locomotive Axles and Frames, and trom Roty inds, Iron, Fridge and Moor were Specialty.

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL, nave prompt attention. Send for Catalogues. Address

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

HINCKLEY, SPIERS & HAYES, Proprietors.

(ESTABLISHED IN 1865.)

-ио вявяютоличими-

MARIUE BUGIUES AND BOILERS.— Propeller Engines, either High Pressure or Compound Stern or Side-wheel Engines.

MINING MACHINERY.—Holsting Engines and Works, Cages, Ore Buckets, Ore Cars, Fumping Engines and Pumps, Water Buckets, Pump Columns, Air Compressors, Air Repes,

MILL MACHINERY.—Batteries for Dry or Wet

Crusbing, Amalgamating Pans, Settl 12, Furnaces, Ke torts, Concentrators, Ore Freders, Rock Breakers, Fur naces for Reducing Ores, Water Lackets, etc.

Machinery, Powder Mill Machinery, Water Wheels, MISCELLANEOUS MACHINERY.-Flour

Tustin's Pulverizer

**MORKS ORE WET OR DRY.** 

**ENGINES** BO LOZIINZ BOLVERIZER.

OE VIL KINDS,

Either for use on Steamboats or for use on Land.

OF EVERAL PROMPLY STEERED FOR AT THE PROPERTY OF TAKES. Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

AGENTS FOR THE PACIFIC COAST FOR THE

SPECIALTES: Deane Steam Pump.

Corlies Engines and Tustin Ore Pulverizers.

DEAUE SIGN Ford Manufacturers of the Liewellyn Feed Water Purifier and Heater.

STEAM ENGINES,

ARCHITECTURAL IRON WORK, tce and Reirigerating Machines, Shaffing, Pulleys, etc.

GENEERT MYCHINE MOEK'

San Francisco, SAVAGE, SON & CO., 135 to

DULL **DEBFECT** 

Medart Patent Wrought Rim Pulley ole Linensed Manufacturers First Premium Awarded at Mechanics' Fair, 1884, CLOT & MEESH,

SHAFTING, HANGERS AND APPURTENANCES

C. A. STETEFELDT, President. CD

tured by Oberles Eneu Johnson & Oo., 500 South 10th St., Philadelphie. Franch Offices ce-47 Rose St., New York, and 40 La Salle St., Ohicago. Agent for the Pacific Cost-This paper is printed with Ink Manufall of the confidence of the c

> MINING MEN NOTICE TO

and others interested in ENGINEERS, CONTRACTORS,

TUNNELING, SHAFT-SINKING, ETC.

WITH MAPS, ILLUSTRATIONS Engineers' Tables of Progress

VAD EUL DESCRIPTION OF THE

NEM LOBK

Section 16x16 feet; Length 36 miles.

THIRD EDITION NOW READY.

For Catalogues, Estimates, Etc. address:

INCEBSOFF BOCK DRIFF CO'

REPRESENTED BY

PARKE & LACY

SAN PRANCISCO, OAL. 8 California St., and 21 Fremont St.

GREAT REDUCTION!

BATTERY SOREENS.

PERFORATED SHEET METAL

For Flour and Rice Mills, Grain Separators, Revolving and Shot Sorems, Stamp Batteries and all kinds of Mills in grand Milling Machinery. Iron, Steel, Copper, Brass, Sinc and cober metal punched for all uses through and than interest of the celebrated Slot Cut Inventor and Janufachurer of the celebrated Slot Cut or burred and Shoulecthed Sorems.

Mining Sorems a specialty, from No. 1 to 15 (fine).

Orders promptly attended to.

San Francisco Pioneer Screen Works,

21 & 223 First St., San Francisco, Cal JOHN W. QUICK, Proprietor.

N' S' KEILH'

Inventor and Manufacturer of

Keith's Electric Dynamos

MOTORS, LAMPS

Storage Battertes.

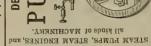
Electric Rellways, and Apparatus for the Electric Transmission of Power,

Office, 40 Nevada Block,

Factory, II Stevenson St.

H. EVANS

**WACH NE WORKS** 110 & 112 Heale Street

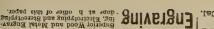




THE RUSSELL PROCESS COMPYY

NEW YORK OFFICE, 18 BROADWAY

Joseph H. Dorety, 529 Commercial St., S. F. Nos. 129 & 121 Fremont Street,



1881 82 VON

WIGHNIEDIN W

San Francisco, Cal.

ALLENGE

(\$212'00) E' O' B' FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OARE 1400 VHE NOM IN USE. Concentrations are clean from the first working. The west and

The Mourant Chairs of the superiors of your Free Vanners In a competitive trial with other 8, 1885.

Dear Signs — Maving tested three of your Free Vanners In a competitive trial with other colours of the superiority of your Vanners, as is evidenced by the fact of our inaching red twenty more of your machines for innicialize delivery. Yours study.

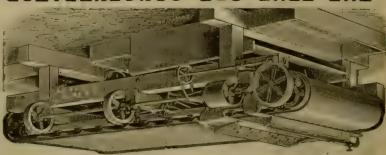
THE MOUTANA COMPANY (Limited).

W. B.—Since the above was written the 20 Vanners having been started trace unth mathematical harded.

Since the above was written the 20 Vanners having been started gave such astisfaction that 44 addi and more stamps have been purchased.

Protected by patents May 4, 1809; December 22, 1574; September 2, 1579; April 27, 1880; March 22, 1881; February 20, 1885; September 18, 1885. Patents applied for.

SAN FRANCISCO, CAL. Room 7, No. 109 California Street, ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OR VANNING MACHINE, OBE THE FRUE CONCENTRATOR

# FIVE HUNDRED AND FIFTY DOLLARS

San Francisco, C

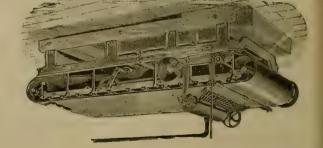
"(00°0gg\$)

The present improved form of the colebrated "Triumfff" Ore Concentrator possesses many advantages over any other style of Varmers, Varning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their cost of tron, insures their solidity, durability, and perfect dure of motion when operated. They are built as compactly as their requisits estength will permit, weigh less, respect in motion when operated. They are built as compactly as their requisits estength will permit, weigh less, replaced in front of and which takes the discharge from the feed and smalgam bowl. The improvement has recently been introduced and smalgam bowl. The improvement is in the rectiprocal in front of and which takes the discharge from the feed and smalgam bowl. The improvement is in the rectiprocal in front of and which takes the discharge from the feed and smalgam bowl. The improvement is in the rectiprocal in front of and which takes the discharge from the feed and smalgam bowl. The improvement is in the rectiprocal information which is intendent to the feed and smalgam bowl. The improvement is in the rectiprocal information which is imparted to the free intendents of the sensition of the sensition of the shelp is attached the tender of the embience of the empirical of the sensition of the shelp in the sensition of the sensitio

JOSHUA HENDY MACHINE WORKS,

Nos. 39 to 51 Fremont St.,



"TRIUMPH" ORE CONCENTRATOR. CHIL

# SOILER.

NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

Harmony Borax Mining Company, 75 H. P. Oakland Gas Light Co., Oakland. 1 200 H. P. The following parties flave these fines and the following parties flave the following parties flave the following parties flave fines for the following parties flave fl

San Francisco, Cal. PACIFIC IRON WORKS

SHED CAPACITY, BY WOOST LATTICE, BULL WOOST LATTICE, BULL WOOST LATTICE, BY WOOST LATTICE, BY WOOST LATTICE, BY WOOST LATTICE, COVERNING TO WORKS, PARTICULATE, COVERNING TO WORKS, PARTICULATE, CONSTRUCT AND PERFORMED to furnish from SAM FILLY WAS AND HEAD CONDER, WATELE PRICES, WATELE HAVE HEAD CONDER, PRICE PRICES, WATELE HAVE HEAD CONDER, PRICED TO SAME OF MAN AND PRICES, WATELE HAVE AND HEAD CONDER, PRICED TO SAME OF MAN AND CONTINUES OF MAN AND CONSTRUCT AND PRICES, WATEL PRICES, WATEL AND HEAD CONDER, PRICED OF MAN AND CONTINUES OF MAN AND CONT

VALE EDR GOLD AND SILVER WILLS, oing machingly of LATEST DESIGN and

MINING

Chicago: New York:

MACHINERY,

BRAYTON & CO.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

DURABILITY, SAFETY,

ECONOMA'

. вап пі мои темоч езгон 000,00 AND FACILITY OF INSPECTION and REPAIRS.

Boilers can be seen working in San Francisco at Palace Rotel, Spring Valley Water Works Hueter Bros. & Co., California Jute Mills, and other places.

Guaranteed More Efficient than any other Boller made.

HEFRICERATING MACHINERY for Steamships, Brewerles, and Cellars.

WILSON'S PATENT GAS-PRODUCER.

STEAM WILLERS of all descriptions.

SUGAR MACHINER—Steam Pachts, Marine Engines and Bollers, Screw Propellers, Centrilugal Fumps, Steam Capashars, Cargo Winches, etc.

STEAMSHIPS—Steam Capashars, Cargo Winches, etc.

REPHIPS—Steam Capashars, Cargo Winches, etc.

Millious of 120-steam Capashars, Cargo Winches, etc.

Millious of 120-steam Capashars, Cargo Winches and Bollers, Screw Propellers, Central Pumps, Steamship

Millious of 120-steam Capashars, Cargo Winches and Milliard Mi

BULLDERS OF

Manufacturers and Sole Agents for the Pacific Coast for

BOILER WATER TUBE HEINE SAFETY

AIR COMPRESORS—Rope Power Transmission.

AIR COMPRESORS—Rope Power Transmission.

AIR COMPRESORS—Rope Power Transmission.

HYDLAULI, PUMPING and Hoisting Machinery.

WEOUGHT-IRON WATER PIPE a Specialty. More.—Have just completed order for 35 miles of 44-Inch profit or for Spring Valley West Company, San Francisco.

SAW-MILL MACHINERY of all kinds

SAW-MILL MACHINERY OF ALL MACHINERY BOILST (Water Tube);

SAW-MILL MACHINERY OF ALL MACHINERY MACHINERY BOILST (Water Tube);

on, own dulleys, will not break in transportation.

If on pulleys, will not break in transportation.

Machinery

Patnam Planer.

SALT LAKE CITY, UTAH.

SAN FRANCISCO, CAL,

PORTLAND, OREGON,

NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and

MOTICE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are fested be-tore lore leaving our works, hereby avoiding the complaints about light weight, made so often before we started in this branch of industry.

JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material, 521 & 523 Market St., San Francisco,

BATTERY SCREENS AND WIRE CLOTH

HIDRO-CHERON PSSVI KOENVCES Agent for HOSKINS'

OKE OFOSHER

IN QUARTZ, GRAVEL, OR PLACER MINES. LO GOLD MINERSI

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

TOS FIRST STREET. FRANCISCO NOVELTY AND PLATING WORKS NAZ

Centrifugal Koller MANOPACTURER OF

Mining Machinery of Every Description, CONCENTRATORS AND ORE CRUSHERS.

steam Engines and Shingle Machines,

SEND FOR CIRCULAR

HUNTINGTON,

Cor, Fremont and Mission Sts.,

TURBINE WATER WHEELS.

SHIMER MATCHER HEADS.

EXHVDLES BLOWERS

CURIN BAND SAW BLADES.

SICKLORD'S POWER DRILLS.

SAN FRANCISCO, CAL. No. 45 FREMONT STREET,

JUIM AMATS DOORFE "ECONOMIC"

Centriugal koller Quartz Mill.

We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the reputity (300 strokes each per minute), with which they run. There are 4800-strokes of the shoes on the dies per minute, Less power is required than in any other mill to do the same amount of work.

The M rist has sereens at both ands, giving ample discharge. There are no cams or tapThe M rist has sereens at both ands, giving ample discharge. There are no cams or tapstar and a star and a star and a star and a star as the star and a star as the same as the shoes wear.

FEEDER AN AUTOMATIC ORE

Goes with each Mill. We also have a suitable

ROCK Ereaker.

Several Mills are now in the mines doing excellent work. The "Economio" is not only a mill for small mines, but we believe it is destined to supersede the old stand in mills of the

TATUM & BOWEN

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc. 34 and 36 FREMONT STREET,

SAN FRANCISCO, CAL. TO MILL SUPPLIES AND LUBRICATING OILS.

YACHT ENGINES.

FROM 2 TO 100 H. P., ALWAYS IN STOCK

DISSTON'S CIRCULAR SAWS. KORTING INJECTORS AND EJECTORS. NATHAN AND DREYFUS OILERS. TANITE CO.'S EMERY.
AND MACHINERY. INDSON ENGINE CONERNORS. SICKERING ENGINE GOVERNORS EMPIRE LAUNDRY MACHINERY OLLO SIFENT GAS ENGINES. SOUTAL ENGINES. VALUS ENGINE MORES ENGINES

H. W. JOHNS, ASBESTOS PACK-

IVAE VAD BODIEK SVM MITTS NEW YORK BELTING AND PACK-

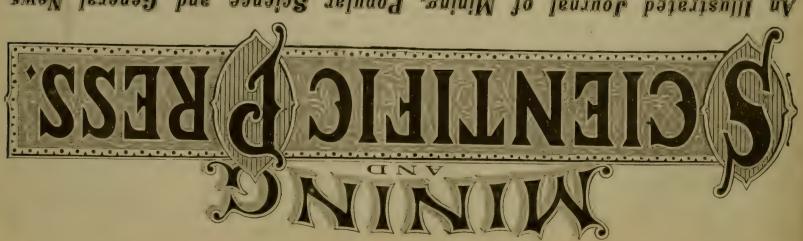
ENGINES' MITTIPWOON BEOS, HOISLING

San Francisco, Cal.



SOLE AGENTS FOR

NIHENA



SAN FRANCISCO, SATURDAY, DECEMBER 10, 1887. VOLUME LV. An Illustrated Journal of Mining, Popular Science and General News.

At the regular meeting of the Academy of shine with equal intensity? The speaker exSciences on Monday last, the following donations were received:

спломи прои в свичва.

lighte of different intensities, at what point

An Automatio Sersen for Flume.

socretor for flumes and disches. The object is such as each of the Farralones island to despose of all debris, and pre-free parts of the flume or disch, and pre-free parts of the flume or disch part county, has recently patented through the Alixing Aza Scinutific Parks Patent Agency David B. Hunt of Angels Camp, Calaverse

tions were received:

Academy of Sciences.

low, the debris being caught by it and dis--gradesib has acitoss reque the and dischargflume or ditch, the screen receiving the eling screen, located between sections of the The invention consists of an endless travvent them from passing down to the tank

The engraving on this page gives a pering it into the continuation of the flume be

spective view of the soreen and the mechanism by which it is devised. A is one section

The construction and arrangement of the rom said section. section, being adapted to receive the water screen, while the lower section B is ander its upper fold and is in line with the upper edt evoda si emuh edt lo noitees requu travel is at right angles to the flume. The endless soreen D, the direction of whose therewith, Over these drums passes the the section A. There are two drums, Oone on each side of the flume and parallel other section, which is in a lower plane than to acitaunitaco eti si & bas emufi edt to

drums and of the screen may be of any suit-

a counter-shaft, Q, the other end of which carries a small beveled pinion, g', mesbing with the beveled gear c on the shaft of one which a belt, F, extends to a pulley, g,

the shaft of the wheel is a pulley, e, from

the stream of water in the flume. Upon The means by which the endless screen is driven are as follows: E is a water-wheel mounted in hearings on each side tions d3 of the screen are laid and secured. gether by rods &, which are long enough to serve as pivots for all the chains, the links of each chain being held in place by gaspipe sections, d2. These chains, thus united, become's carrier on which the section. whose links are bars or rods pivoted to

of the flume, said wheel being operated by

able character, although in practice the inventor uses polygonal-sided drums, over which pass two or more endless chains, d,

are eaught upon the screen O, while the water of the notions a sessed through into the lower section of the this device is interposed the leaves and debris with it a lot of leaves and other debris which usually goes on down to the tank; but where The water coming down the section A brings The operation of the device is as follows: of the drums,

little device is applicable to flumes or ditches of any size, large or small. It is automatic in the operation and requires little or no attention, and preventing it from becoming clogged. prush for keeping the meshes of the screen open se downcoming water. If found necessary, Mr. Hunt provides a them, presenting continually a free surface to leaves and debris off to one side and discharges dume. The motion of the screen carries the

the operation and requires little or no stetential.

"The Problem of the Lights" was the sundable it removes all brush, leaves, twigs and step of the paper by Prof. Geo. C. Edwards of the Australia, has written a very favorable and expensent office is room 17, 318 Pipe street, in algebra to illustrate equations of the surjective room 17, 318 Pipe street, in algebra to illustrate equations of the surjective room in the mines of Braken Hill, degree, and, as the speaker stated, is as old as in which are found the principal argentilerous turber particulars.

In the Oniversity of California, This problem is deposits of the very favorable and expenditure of the principal argentilerous degree, and, as the speaker stated, is as old as in which are found the principal argentilerous turber particulars.

of a vessel in the process of erection.

limet having built its nest between the timbers tain Thayer arose and mentioned the case of a

ter can. At the conclusion of the remarks, Cap.

bottom of a hole five inches deep in a live-oak tree; also that of a sparrow nesting in an oye-

that of a dy-catcher building its nest at the

nesting-places of the California birds. Among

Chas. W. Knox, descriptive of the peculiar

series of notes furnished the gentleman by Messrs. W. O. Emerson, A. M. Ingersoll and

near nesting-places mentioned was

The latter paper comprised a

Territory was donated by Mr. John Dolbeer.

Tennes from seaboard, and there are no railroads, We some seaboard, and there are no railroads, was donated by the search of t

HUNT'S AUTOMATIC SCREEN FOR FLUMES AND DITCHES.

of copper now on the market is very much re

10 Monday last the big drop in the prince of

PRESS, so that he keeps posted on the mining

subscriber to the MINING AND SCIENTIFIC a liss an old "Pacific Coaster," and is still a

of a foseil fish from the foseil-beds of Wyoming many drawbacks. The mines are a long dis- and making the work of enlightenment on both

news of this section of the world.

345 miles inland from Arica, Chili.

Now is the time to begin the assessment work on the unpatented mining claims.

tin increased the excitement in the New York Metal Exchange. In sympathy with cable advices the New York market declined a cent a pound. During the day the local copper market advanced about 20 points. The quantity

advertising, it is hardly necessary to add that a mining journal of good repute and wide oirculation should be selected, such being the publication most likely to be consulted. be mere "prospects" or "going concerne." In making choice of a medium for this sort of dealing in mining properties, whether the same more generally adopted by those interested or

gether, and we do not see why it should not be

sires, and for bringing the buyer and seller to-

eseined to entire other bine of business of property of the same and descriping expression to their warts and de-

wants known in the same manner. This is the

this sort of property for sale, giving all needed particulars; would-be purchasers making their

by this method notilying the public that he ha

sides easy, we suggest that some advertising be done by both these parties—the claim-owner

As a means of obviating these difficulties,

regard to them, they do not know, nor can they easily find out.

mation respecting them. Just where they are, how to reach, or who to address in but are without any exact or detailed infor-

about the locality, price or ownership of these cheap mines in embryo. They know, as we all know, that they exist in great numbers throughout the mineral idestricts, my resembled to the contraction of th

the capitalist nor his agent knows anything here in California, we are fully persuaded. But there arises this trouble: Neither

look after these incipient mines, at least

class of properties that ought to commend Now it occurs to us that we have here a

velopment, from the mere sessement annu-ally required to a condition of thorough

exiet, in fact, in almost every stage of de-

part of these mining claims, many there are that have been pretty well opened up. They

much work has been done on the major he is, generally speaking, a pretty good judge of mining "indications" must be conceded. But while it is true that not

means, is not apt to spend much of the same on a claim wholly devoid of merit; and that

prospector being usually a person of small are all worth something; as much in most instances as the price asked for them. The

them will some day become profitably pro-ductive properties; not a few, perhaps, mines of great value. Presumptively they

to ynam erntibneqxe to tanoma estiaiuper pects," not mines. But they are the things out of which mines are made, and with the

much developed. They are mere "pros-

need ton eved sesso to ytivojam a ni rettal

much as these men can do to keep good their possessory title to their claims. Hence the

sa Ullanan si ti ,liams meed sad bue tadt of

Aided and encouraged by the liberal policy that has governed the disposal of our mineral domain, the prospector and miner have been able to locate and hold one or more mining claims, even though possessed of but limited the manual of the standiture required an means. But while the expenditure required an entangle of means of the standiture required

.asniM beqo How to Promote the Sale of Undevel-

come when capitalists would do well to public, insenuch as they are presumably worth something and can almost always be bought at reseanable prices. That the time gaitsevai edt to acitaetts edt ot sevlesmedt

#### The Ilex Gold Mines,

The Hex gold mines comprise the Tiger mine, the East Extension, Aranoa, Character the East Extension, Aranoa, Character the East Extension, Aranoa, Character and the East Extension, Aranoa, Character and the East Extension, Aranoa besides a great deal of land, valuable for timber and other purposes. These alpos to the East Extension, Aranoa depth, many thousand dollars having been a feet of one another, and depth, many thousand dollars having been a factor of the Ever mine, has a factor of the East Extension and the East Extension of the East Extension and the Argio-East Extension and the East Figer mine, and the East Figer mine, and the Organ Store East Extension and the East Hopen Typer Ville East Extension and the East Hopen Typer Type East Extension and the East Hopen Typer Inches East Hopen East Color and the East Extension and the East Hopen East Extension and with no mean products from limited operations in quartz. Like many other locations were allocations in quartz. Like many other locations were attituded into a documentation of the country was country being bein The Mines. anciterage bestimil mort etsuborq mean on driw the first first many offer solities in the solities of the case of the first solities. The solities of the case of the solities placer mines rolling in a generous contribution, of the precious metal to the world's circulation, sarly history of mining on this coast, the inently as a gold-producing locality in the Rich Gulch Mining District has figured prom-

The Sutro Tannel. (To be Continued.)

lished an article descriptive of the Sture tunnel In a recent number of the Press we pub-

prepared and the butto Turnal Committee of the butto that the butto the butt need sat vneamool leanuT outs edt to noitszi property. Since then a plan for the reorgan-

hand perhemently.

And perhemently.

And perhemently are competed by the tense in the tense of t

atockholders is urgently requested by the compary pany.

The plan of the bonds has been prepared by pany.

The plan of the bonders in New York as a committee of stockholders in New York as a gainst the company for the foreclosure of the settlement of the develop and first mortgage and to enable it to develop and first mortgage and to enable it to develop and committee that the bonds will commend them the following attractive features:

The bonds are a first mortgage, four per cent to run on a server be only as a first mortgage, four per cent to run and are offered at 50 cents on their face to run on a form of the mer bonds will be ordered by the new mortgage, and the interest payable out of the net income of the interest payable out of the net income of the company, and the property will not be subject incompany, and the property will not be subject or income of the company, and the property will not be subject incompany, and the property will not be subject before the payable out of the maturity of the mort-gage.

revengeful feelings, and the Archard Herr, and Evergering as if he were intoxicated. Lugunga drew her poniard and awaited him—but of any however, when the moded. Thom that day, however, when the peniard and awaited him—but would be the poniard and awaited him the they way and the teleful season in La Guapa heave of Lugunga drew her the result of peniar per season to not concluded, the raymor requested Lugunga the felline rece schibitt his the dark. Saturday came, and when the reach or parametral for season to concluded, the reach. The particles as the money did not reach. The barreteros as also money all the felline west to the reach. The particles as the money did not reach. The barreteros as the money of all the reach of the week there is a constant activity, a continuous buttle, and it is constant activity, a continuous buttle, and it is an interest of the work not being suspended for any consent more and all the employees, overput the desague (pumping or direction, playing albures go out to walk, the form and little and frequently give one another wasterned of incovitation, playing albures (pumping or three canother work to walk, to return to their work. Usually they begin to direction, the poniards. At dusk they begin to incovitation, playing albures, they have earned of incovitation, playing albures, they begin saber, or there reals for they begin to renot the real of two or three reals for they begin to return to their work. Usually they begin the portero, some one passing, or a barry who say so lie.

The Curred Hours man, but they who say so lie.

The Curred Hours man, but they were the their and they have been said they are the subject to the porter of the porter of the form of the form of the form of the fo

ranks they replied with joylul cries of the change in a change the change in the chang "I Viva La Chula! Viva La Guapa!" of this, more beautiful. Her companions, the pepenadoras, adored her. She was mandona of the pairs (court, or open space), and to her pranks they replied with joyful cries of

Unfortunately for Her,

He Advanced Toward Her,

The Mines and Miners.

BY PEDRO CASTERA,

Translated for the Press from El Minero Mexicano by M. M. M.

Lost in the Cave.

In the mids of bringing me nester to my last hour, as the mulous voices: "(\*Sanov, ozmo, I am hughy, boild, and above all, I am afraid of birsty, cold, and above all, I am afraid of the Malo," "(\*Coward!")" 'Sube, ozmo," "(\*Sanov, ozmo, I am hughy, be Malo," ")" 'Osward!" " "Del Malo, show, the be Malo, show, the delivers was inspiring, activated not pronounce the name Diado. Treakly, it was too much! Destiny was glutactually dared not pronounce the name Diado. Treakly, it was too much! Destiny was glutactually dared not pronounce the name Diado. Treakly, it was too much! Destiny was glutactually dared not pronounce the name Diado. The prince of the contraction of the terminal properties. By an involuntary movement which is a select to the contract of the lum, were bringing me nearer to my last hour. In the midst of his sobs I heard Manuel say, with drops of water, which, like the eternal pendu-Mothing is more painful than to see an energetic man like that weeping. He had a wife and children, and although I had a mother Wish not weep. I had lost the idea of time. My mind was now tranquil, and I heard only the draws of water which like the sternal nandrendary.

"Look, Amo, Look!"

tear? What is the matter?

I opened wide my eyes, but my greatest efforts did not enable me to see. "What have I save I to look at hombre?" "That shadow, sinor—here at one to see. "What have I save I to be the see. "What have have me to see, "What have have me to see, "What have have me to see the to see the word have a one, and no have a considered my like the there was one, and in fact, by the disploy "I said; in sort, "What disploy is for the factor of the disployed my confidence, sorthwisting the more factor of the m

La Guapa.

Le Grange, the statistic mental statistic more given the statistic more

Mr. G. C. King, who recently returned from Unga island, Alaska, says:

Unga island, Aleaka, and the secondary patential form the secondary of the

Humbolds county, is said to have been sold for Humbolds county, is said to have been sold for posed on the surface is estimated at 10,000,000 cour. It was purchased by a syndicate of Englow London, who has inspected the purchase and found it better than repercented. It is located to the contract of the county  france and England, where it is in the county of the county, france and England, where it is large fields of alkalfa that are every producing, the county of the county, france and England, where it is large fields of alkalfa that are every producing, on account of the respectably in vision to underwood of the county of

Does In A SAMMILL.—There is said to be an extensive lumber company at a point in the United States which we do not care to name, the majority of stock in whole is owned by English atockholders, an inventory of the company's properly was under consideration, the English atockholders, an inventory of the the Rescretary read as among the seeds of the secretary read as among the season of the course, to the iron dogs used to secure togen in the season of the lordly stockholders, "don's engines used one of the lordly stockholders, "don's wait the think it a piece of nurwarrantable extravagance one of the lordly stockholders, "don's you think it a piece of nurwarrantable extravagance to keep o'n-e h-n-n-d-re-d dogs to watch only to keep o'n-e h-n-n-d-re-d dogs to watch only is donkeys?".—Lumber Trucke Journal.

pression that the estimate above releared to pression and pression and that the estimate above releared to stated out a fraction of what the belt might be relied out to produce.

The scottal resource will, as a matter of course, never be known, eave as an approximation, and the figures submitted only claim contourse, never be known, eave as an approximation, and the figures submitted only claim communes, never be knowledge, at least, of the area of the belt (to determine which the special knowledge, at least, of the area of the belt (to determine which the special knowledge, and any and the special character of information the view of professional character of the capture of the since the special character of the cleter.

The special character of the cleter of processing of professional timber experts, owners, survey.

The special character of the cleter of processing officers were gathered by the tiews of professional timber experts, owners, survey.

Alturas County, Idaho.

of Alturas county, says the Inter Idulo.

other words, of the total production of gold, silver and lead in the Territory, Alturas county vielded more than one-third. during the last year did not double the output All the other 14 counties of Idaho together

yielded more than one-third, Altares county yielded more than one-third.

It yielded 46 per cent of the silver and 41 per cent of the lead—not far from one-half of each, a social imassaurably abasd of any other, county in the production of these two metals, but in the production of these two metals, two. What more is needed than the presentstiwn of these facts to impress capitalists with the wonderful weakle of Wood Kiver and the outlying districts.

In proof of these statements we give the following figures from the report of the U. S. assay office at Boise City for the year ending September 18 boise City for the year ending September 30, 1887;

Alturas county Custer " (next best). The entire Territory.... | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,

Minion and Advertiser.

Metrius Dowy Silver Dollars. — The graged in melting up the last 300,000 of the analysing deceases of the last 300,000 of the last 300,000 of the last 300,000 of the last 300,000 of the latter of the season of the latter trade dollars recently redeemed by the aliver trade dollars recently and turned over to the season office of the season office, where the latter in the season office, where the latter of the season of the valids in the season office, where the latter of the latter of the season of the valid to the latter of the

Del Norte county—Acreage, 86,163; estimatèsed amonnt out, 61,150,000 feet; total estandruc, 8,56,101,000 feet; total estandruc, 1112,000,000 feet; total standruc, 116,167,553; out, 1,112,000,000 feet; total standruc, 16,167,74,112,000,000 feet; total estandruc, 18,63,000,000 feet; total estandruc, 19,83,000,000 feet; total estandruc, 10,952,000,000.

Estimate of Standing Redwood by Counties.

| 200,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,

Attempts the condense of the best of the best of timber the best of timber resources of the belt. The best of timber resources of the belt. The best of the best of the best made by Mr. John Dolbeer and submitted to Col, E. S. Williamson, United States Engineer Corps, in 1880—certainly States Engineer Corps, in 1880—tertainly many of the prominent mill-owners slong the coast, which entitles it to consideration. This coast, which each end of the prominent will-owner show the second of the prominent will owner the second of the condense as of the condense as follows:

The Lumber Resource.

Redwood Resources.

one resources of the countries above named, which consistents the object redwood belts of California; no cleaved of timber would, in most parts of the object redwood belts of timber would, in most parts of the belts of timber would, in most parts of the total times of the consistent ince times the best lates consistent was most about the streams, always taking when the ceeding along the streams, always taking when the ceeding was most according as each operation. The streams along the consistent of the ceeding when the streams are consistent of the ceeding when the streams are consistent of the ceeding when the streams of the ceeding when the ceeding we will be served to the ceeding of the ceeding which along the belt have not been insignificant, may worked over were embraced in or totally excepting an exaggeration of an understatement of the index drom the belt have not been insignificant, may be indexed by the distance from which parts along the best camps are 39 miles from which the attack of the miles of man to often transported to the mills.

The Mendocino Lumber Company's advanced the Michael ly water had along the Albino mill draws its logs 19 miles, of water logging camps are 39 miles from which had shown as tretches.

The Mendocino Lumber description of time spring only the most promessed the stretches, and the highs of the rings of times of times of times ports. Belt of or supplies of the supports on the like split materials of the supports on the like split maters beet destruction with his into waste, who had along the tree entire waste, it its grain proved refractory or its texture the feet mills of the miles of the supports of the constitute the chief redwood belt of California.

Del Morte, Humboldt, Mendocino and 80-noma Counties.

We condente from the Ukiah City Press the following account of the lumber yield and pres-ent resources of the counties above named, which constitute the other redword pets of California.

ried as follows: Gold, \$58,188,953; silver, Sof,481,811.

The silver dollar coinage was 29,433,342.

Standard ounces, at a cost of \$25,986,981.

The silver dollar coinage was 29,433,342.

"Aumber of silver dollars made was 33,266,821.

Silver dollars to the amount of 10,901,922 were distributed from the mitse during the year and distributed from the mitse during the year and 10,500,000 transferred to the Treasury.

Tunnber of trade dollars redeemed by the Act to September 4, 1887, was 7,689,036. The Treasury from the date of the passage of the random of the Act to September 4, 1887, was 7,689,036. The Act to September 4, 1887, was 7,689,036. The Act to September 4, 1887, was 830,561, The Trade of the passage of the passage of the passage of the cope of the passage of the cope of the passage of the folder of the total standard assage of the cope of the passage of \$5,842,819, and the total expenditures of the mitse and assay offices dollars.

The sume of the gold and silver bars issued from the United States and olders of the passage of the mitsed standard spin, for use in the industrial arts during the year, was \$81, 189, 509.

York and the Mint at Phriladelpina, for use in the industrial arts during the year, was \$81, 189, 509, and \$85,71,825.

The since of the gold sud \$4,471,646 silver.

S95,710 gold and \$4,471,646 silver.

STOREY COUNTY MINES.—The assessor's abstract statement of the bullion product of mines abstract statement of the bullion product of mines and virgin is shown filed with the county during the only one it concludes.

Sulforing and Virginis is the only one it concentring as the other ore-producing mines on the concentring as the other ore-producing mines on the collibration and Virginis statement reads as lack of a lack of careing prover, due to the the chone statement reads as lack of such the Careon river. The Consolidated California and Virginis attement reads as follows:

Tokal number of tone 50.25 55; gross Vield or value, \$584,614.99; oost of extraction, \$21,924, value, \$584,614.99; oost of statement reads as follows:

yield, \$183,661.24; tax, \$5489.75. The gross vield, \$181,468.006; total cost, \$255,745. The gross of one of the decete safely transport transport.

S21,82 per ton. Lack of the preceding quarter, anding Julion product of ore extracted was average bullion product to ore extracted was average bullion product to ore extracted was was the cause of the decrease in the bullion product transport of ore extracted was product from the mines in the bullion product from stempting facilities were the cause of the decrease in the bullion force or extracted was the cause of the decrease in the bullion ground than the mines in the total bullion product from the mines in the solid bullion product from the mines in the total bullion product from the mines in the gors. Both below that ended June 30, 1837, was 1,072,902.80.

In addition to the coinage executed during the year, gold and silver bars were manufact-nred as follows: Gold, \$55,188,953; silver, \$6,481,611.

the value of the gold and silver received at the mints and assay offices during the fiscal year the mints and assay offices during the fiscal year since 1881.

The value of the gold deposited was \$468,.

223,072. It addition there were deposited to value of \$15,193,706.

The value of \$15,193,706.

The value of \$15,193,706.

\$15,775,918. Redeposited, \$32,973,027 was do.

Of the gold deposited, \$32,973,027 was do.

\$15,775,918. It is addition to the gold deposited to the first since for the gold coin, \$316,894. United States gold coin, and \$2,265,219 from old marked states gold coin, and \$2,265,219 from old marked states gold coin, and \$2,265,219 from old marked states of the fiscal year was:

The value of the gold and silver received at

Mint Operations.

All necessary buildings have been constructed, and are neat, commodiums and comfortable. The Buildings.

Besides the latte or the Machael of The Machael of The Machael The Institute of the company bave flow osnatil prospect in the contines, one doing the hotesting in the Schlund shaft, and then other the noisting in pressor. The plant for a 12-drill compressor the plant for a 12-drill compressor has been contracted for and will be put \$9 shortly. The estimated expense for water-factorial compressor and the statement of the sta

The Director of the Mint in his report says:

Description Pheces. 5,734,420 Allore Colid 5,734,420 4,23°,534 Minor colus 50,7160,549

The coinage of the fiscal year was:

The lumber resource concentrated in the redwood belt being the most important in the
State, both on account of its magnitudes and
State, both on account of its magnitudes and
productive power of merchantable lumber at
productive power of merchantable lumber at
least that of all the balance of the State comtent, character and probable duration, was content, character and probable duration, was content, character and probable duration, was content, character and probable duration, was contraced before with any attempt at determined,
the effective area of redwood land determined,
the officitive area of redwood land determined,
area by rough approximations, based upon asmaned widths of the belt, the results of which
ammed widths of the belt, the results of which out, 1343,000,000 feet; total standing, 10,952,...

500,000

500,000

600,000

600,000

600,000

600,000

600,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700,000

700

700,000

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

700

70

A. T. DEWEY.

#### Cable-Railway News.

own all the "bottom" patents on the cablegrip. A decree in open conrr was mach a ticense the bridge trustees have taken out a license from the Rational Cable Railway Co., who, in

madgaimrid ai tliud gaied yawliar eldae edT railway ayatem.

will be opened by Christmas. It is la miles conjunction with the Pacific Cable Railway Co.,

The Brooklyn Bridge Trustees have recently lost their case in the suit of the National Cable Railway Co. for infringement of the Hallidie

Pritchard is the engineer.

tects the home product against foreign importa-But here the cost of carriage from either the Atlantic or the Pacific Coast sufficiently proin all the countries lying farther in the interior. course of a few years go far toward meeting all home demands. With the exception of Meyards, valuable deposits of coal have been found

greatly cripple the business of their production, next few years. Placing these metals on the free list will, on the other hand, be sure to andergo marked expansion in the course of the tion or other untoward event, will be likely to not only regain its former dimensions, but to rease, and in the absence of unfriendly legislaproved market, their output has begun to inyear or two since, something of a check, owing to the low prices for these metals that had come to obtain. Recently, with a slightly im-Territories enormous proportions, received, a The product of lead and copper, after having reached in several of the Pacific States and

however, be so seriously affected by the adsidmulor would be that of British Columbia; The only competition we on this coast would have to fear from free trade in lumber if it does not kill it outright.

into this country; nor is it likely that our woolit must necessarily evoke a powerful opposition to the free importation of the foreign article States is so large and so widely distributed that may be expected they will stoutly protest against the adoption of such policy.

The wool-growing industry of the United mission of Canadian lumber duty free, that it might become such in the future. The lumber-men of Maine, Michigan and Wisconsin would, a formidable rival at present, though it

world placing also the products of these pur-suits at some disadvantage. remoteness from the great markets of the being young, and standing, therefore, in the greater need of such nourishing care; our monntains, the most of our industrial pursuits tories lying west of and adjacent to the Rocky of protection, no part of the country is more deeply interested than the States and Terriexisting customs. In defending the doctrine growers will assent to any material reduction of

A Chance for Inventors.

tralian colonies. There they built hundreds of miles of rabbit-tight fence to segregate certain but nothing like the rabbits have given in Austrouble with squirrels, jackrabbits, and gophers, by wholesale. In California we have had great Wales wants something that will do the work etc., for individual "pests;" but New South Here is a chance for the inventive genius of the United States. There are now plenty of patented animal traps, rodent exterminatore, pest throughout Australia and Mew Zealand. to American inventors for any process which will exterminate rabbits, which have become a ward offered by that Government of \$125,000 ment of Mew South Wales, announcing a re-Messra. R. W. Cameron & Co. of Mew York have received a communication from the Govern-

session of the country. All ordinary and even extraordinary methods have thus far failed even to keep the number down, much less extracts, for the rabbits have almost taken pos-

may seem simple to those who have given the the possession of remarkable inventive facul-ties, and nothing is thought too difficult for them to perform. This matter of the rabbits Americans have a world-wide reputation for termins to the animals.

ventor's efforts. be cheerfully paid if success attends the inefficiency of any system 'offered will be required, but the reward is a large one, and will they have to solve: Practical proof of the em a long time, finding it the most difficult subject only careless attention, but the Australian colonists have struggled with the prob-

road, which continues on to El Paso and joins the Southern Pacific, nection will be made with the Texas & Pacific It is said that the company intend making an extension to Fort Worth, Texas, where a conrails has attracted attention to their operations. and & Pacific Company for 2000 miles of steel THE contract let by the Chicago, Rock Isl-

Two poor miners have discovered one of the

Extending the Free List.

Territories, Colorado and New Mexico included, copper. In all the other Pacific States and California it would be salt, iron, coal, wool, copregnand Washington Territory it would be the same as in California ritory it would be the same as in California with the exception of salt, and perhaps also the interests which, in such event, would here most suffer, would be, in the several States and Territories affected, something as follows: In named staples, it is needless to say. Speaking for the Pacific Coast, it may be observed that That the custom charges proposed will, if carried out, injuriously affect those eugaged in making or producing in this country the aboveper ton; wool, 10 to 12 cents per pound; lum-ber, \$1 to \$2 per thousand, feet, board measure. lead ore, 1½ cents per pound; iron ore, 75 cents copper in plates, bars, pigs, or ingots, 4 cents per ton; per pound; bituminous coal, 75 cents per ton; 100 pounds; in bulk, 8 cents per 100 pounds; bage, barrels, or other packages, 12 cents per are subject to the following duties: Salt, in the present tariff, the articles here mentioned Mr. Mills, a member of Congress from Texas, has, it seems, preparted a sobedule of import duties, which he will, at the present session of that body, endeavor to have enacted into a law. According to this sohedule, asla, copper and onel, iron and lead ores, wool, timber, and lumber are to be placed on the tree list. Under the present sariff, the articles here mentioned

ket an excellent article of sait at a price so low that they are barely able to keep their works going. Their profits do not probably average much more than the present duty on the imness, which gives employment to several hun-dred men. Competing with each other, these companies manufacture and place on the marinvested a large amount of money in the busia number of companies engaged in making salt by the process of solar evaporation. They have on salt for ballast. Now we have in this State coming from Liverpool have sometimes taken ford to send it here and pay the duties. Ships Francisco by vessels coming here to load with wheat at such little cost that shippers can afnis it is otherwise, salt being brought to San tions, salt being a commodity that will not bear transportation so far inland. But with Califorbut they have nothing to fear from importawhich enough salt is produced for local use, ed from abroad. Other of the Pacific States and Territories contain natural salines from manufactured or into which it is largely importthe only one in which much of that article is try on the Pacific Slope that would be much damaged by its admission free of duty, it being As regards salt, California is the only counit would be the producers of copper, wool and lead that would be most hurt by such remission

from doing so, or to crushing him financially, should he persist in his purpose, operations, when they would be dropped to a ruinous figure with a view to deterring him vanced and so maintained until such time as the home producer might be tempted to resume facturer having the field, prices would be adsums have been expended. The foreign manutheir plant, in the construction of which large be forced to give up the business and abandon ported article. Were that removed they would

our finest ore deposits. The company owning this property suspended operations at a time in California, we have here any quantity of iron ore and of the best quality; also a magnificon ore plant erected several years ago on one of While we are not just now making any iron

cific Coset, that end it will be found can be best While chesp fuel is a desideratum on the Paidleness, these works are now in full blast, and likely to so continue in the absence of hurtful now in operation on this coset, one in Oregon and the other in Washington Territory. After interest. There are two extensive iron works State will meet with early resumption, should the tariff undergo no change prejudicial to that expected that the manufacture of iron in this nerement of population and business it may be when the price of iron was low and the demand for it comparatively limited. With our late

at many points, and of fairly good quality, in both California, Oregon and Washington Terri-ritory; and, with the protection now afforded

reached by fostering our home coal-mining industry. We have deposits of the fossil fuels

'TOJATIOD as the corps of instructors are ready to take cal contrivances, which will be put in as soon buildings have been set apart for the mechanistration, have been completed for some time, and the floor spaces in the three stories of the inchesing the peop est start for the emission or machine-shops, where the theories taught in the college will be proved by practical demonthe school by the let of January. The annexes tion of the roofing remained uncompleted. housed in before the rain, and only a small por-

is a stracting some dittle attention just is or, your is one, you but considerable development work is series of the surfact to be series. nines that were idle last summer.

The Salmon-river region in Washington Terwill have the effect of starting up a good many

Copper miners all rejoice in the fact that cop-r at last has taken a sharp advance. This

this State there are few places where regular mining work cannot be carried on all winter.

driven the nomadic prospector into winter quar-ters. Bad weather has held off so long, how-ever, that they have little to complain of. In

The enowfall in the mountains has, as usual, agam, have started up, and miners have gone to work Many mills which have been idle for weeks

good effect on the mining interests of this State. s had sad " liegs yniar" bennitnoo-gnol edT Passing Events.

Cast fron, ST4.
SOIENTIFIC PROGRESS.—The Three Forces—
Physical, Vital and Paychic; Facts About Lightning;

actions; freewood recounters, and peak files; To Break Develop.

Alaska Mines, ST.

MEOHANIOAL. PROCHERS. — The Developpower, Working Metals by Electricity; Fly Wheels;
Claimin, Inventor and Employer; Pipes and Water
Claimin, Inventor and Employer; Pipes and Water
Claimin, Inventor and Employer; Pipes and Water
PROCHERS. — The Overlap American

Steel; Effects of High Transporters and Water

PROCHERS. — The Develop
Real Steel Steel Control

Real Steel Steel Steel Control

Real Steel 
ILLUSTRATIONS.—Hunt's Automatic Screen for Flumes and Dichoes, 569. Selfeid's Patent Culinary Boiler, Port Hartotick, and Luis Obligho Bay, (Sal. \$372. Boiler, Port Hartotick, and Luis Obispo Day, (Sal. \$372. What Most To Promote the Sale of the Preceding Manages, 1972. What Most To Promote the Sale of the Preceding Law Automatic To Company Manages, 1972. What Most To Profit Improved Culinary Mewes, \$72. What Most To Dot Improved Culinary Mewes, \$72. What Most To Profit Improved Culinary Mewes, \$72. What Most To Profit Improved Culinary Mewes, \$72. What Most To Company Minese, \$73. Management Management Management Memory Memory Memory Management Memory 
TABLE OF CONTENTS.

Saturday Morning, Dec. 10, 1887

SAN FRANCISCO

SCIENTIFIC PRESS PATENT AGENCY. Entered at S. F. Post Office as second-class mail matter

Our latest forms go to press on Thursday evening.

Address all literary and business correspondence for the firm.

Lowdon Acent-Alfred E. Ann, 63 and 64 New Broad Street, E. C.

Advertising Rates

Terms of Subscription.
Annual Subscription, \$8. New subscriptions will be declined without cash in advance. All arrearages must be paid for at the rate of \$3.50 per annum.

M. B. EWER.....SRNIOR EDITOR.

Ofice, 220 Market St., N. E. cor. Front St., S. F.

DEMEK & CO., Publishers.

S CIENTIFIC D RESS

MINING

DEMEX & CO., PATENT SOLICITORS.

Physics, Vieta and Beyonic; Facts About Lightning; Physics, Vieta and Beyonic; Facts About Lightning; BTA, ENGINEERING MOTES.—A Tribute to Degineerof Utilizing Unramile; The Largest Dam, 375,
of Utilizing Unramile; The Largest Dam, 375,
of Utilizing Unram, Official Control of Medanic Mortal Campaign and Campaign a

finishing work will take some weeks yet, but it is possible that the building may be ready for main building of the Coggswell Technical School on Folsom and 26th streets is now mearly completed. The wings had all been Тне Соессуует Теснитсат Зсноот,-Тре needed to prove exactly how good the mines are.

both California, Oregon and Washington Terririchy; and, with the protection now afforded
that business, the output of coal will in the Monroe, Iowa Co., Wis.

Exposition, to be beld under the angliese of the World's Monroe, Iowa Co., Wis.

Exposition, to be beld under the angliese of the the world will in the May, 1889, Governor Waterman to appoint A. S. Hallidle as commissioner from California to the World's Association a resolution was adopted asking 'ererutestuneM edt to gaiteem taal edt TA things in a legitimate way. and does not prevent people buying those

"wheat deal" or "coffee corner" breaks a lot of people, it is no fault of the wheat or coffee, and does not revent people human the

before purchasing. There are as good mines in Arizona as there ever were, and it is toolish to condemn all because of one swindle. When a

reputable, competent men to examine properties

the Arizona mines, but in the foolishness to people who will invest in mines without getting

York market, The fault is by no means with

tempt to sell any Arizona mines in the New

written to some one in Globe, Arizona, that since the Tortilita swindle it is useless to at-

ARIZONA MINES.—A New York broker has

of the most remarkable of the kind in the world, and the engineer, Mr. Greathead, is entitled to great praise for his boldness and originality.

ered. When completed this work will be one

plan of lighting the tunnels by electricity sug-gested by Mr. Hallidie, instead of lighting the cars, was also discussed and favorably consid-

regard to the matter, and it was determined to run the cables about 15 miles per hour and have trains at intervals of two minutes. The

weeks ago, Mr. A. S. Hallidie was consulted in

pelling the care, thus insuring pure air and comparative quietude. While in London about six

necessity of purchasing private property, as they keep under the street and between the

they run one over the other and avoid the the shore, the direction is slightly changed and which run side by side under the river reach

Another feature is that when the tunnels and rapidity of work, 11 feet per day now be-

been perfected by Mr. Greathead, are greater economy in construction, no danger of settling

The advantages of this system, which has

through holes in the cast-iron segments, filling every space and making the casing perfectly

with liquid quick-setting coment forced in

bellit ai doidw agaisso nori-teso edt bas bleids

lowed by a steel shield one-fourth inch thick, which is forced forward by hydraulic pressure. A space of 14 inch is left between the steel

out by arms of 5 feet radius, and which is fol-

bed is done by a machine devised by the engineer, Mr. Greathead, which makes an advance

The easting of the clay which forms the river

The joints are made water-tight by hemp

wide 14 thick bolted together form the casing.

iron tube made of six segments each 24 feet

two of them) differs from the ordinary practice, inasmuch as no brick-work is used, but a cast-

Thames, and the contract for this work has al-

year a franchise has been granted to extend it In miles further on the Southwark side of the

don bridge, under the river, thence to the Ele-phant and Castle, 14 miles. During the past

The subway or tunnels under the river Themes is being pushed with considerable energy. It runs from the monument near Lon-

by the Patent Cable Tramway Co. of London, owners of the Hallidie patents. Mr. Colam, who has had charge of the Highgate cable tramway in London, is the engineer.

proaching completion. It is a double track and nearly two miles in length, and is being built

The Edinburgh cable railway is fast ap-

the Hallidie patent. The company intends to build in all about 10 miles double track. Mr.

double track, and is licensed by the owners of

The construction of these tunnels (there are

unpervious.

packing.

ready been let.

vertical lines of house-holders' property.

The cable railway system will be used in pro-

la za

An Improved Culinary Boiler.

This invention has just been patented through the Minino and Scientific Press Patent Agency. It is a new form of onlinery boiler or vessel for cooking various articles, the design of which may be seen by means of the accompanying ones. The vessel is incended to reverse the companying ones.

wnward inside of the boiler.

On one side the flange is out away, as

deep vertical flange or rim which projects

SALFIELD'S PATENT OULINARY BOILER.

athown, an opening. Corresponding with isfaction. They will soon be put on the marry the state and white ware, as the supplemental opening referred to. The bottom of this second opening referred to. The bottom of this second appropriate the state of th

## San Luis Obispo County.

pare with the most favorable sections of the duced a lively influx of people. The climate, lands, and healthiness of this county will comorq bas aciger asibsors sidt qu beaeqo sad oq The advent of the railway to San Luis Obis-

as a comic state of second and property of the state of second pare or state of second pare of second secon The conformation of the country surrounding

ductive valleys exist in its immediate neighbor-

affords protection from summer northwest winds, but is open to the southeast. San Luis The harbor, which is called Port Harford,

commerce. The benefits which would follow the erection of a breakwater are almost incalculable.

into a good harbor. An appropriation has re-cently been procured to erect a lighthouse there, and this will be a great convenience to

an adains and by the configuration of the bay. A meatrangle of the bay as a meatrangle of the same of

which heavy shipments of beans, grain and dairy products are made to San Francisco. This roadstead is finely sheltered by a range of

ford to San Luis Obispo. It is nine or ten miles in length and passes through a rich country. At the former place there is a fine wharf, from

The Pacific Coast Steamship Oqupany bas -raH Trof mori tawlist system Port and ranking the state of the state

addoording adjacent is quite rich, and is being repuilty adjacent is quite rich, and is ranches rapidly settled up. The large Mexican ranches greatly to the benefit of the county. Considerable chrome ore is found in the county, the able chrome ore is found in the county, the

mines there being the best in the State.

It is nine or ten miles

of the flange of the cover is perforated, formboiler, when the cover is put on, so that this space is opposite the opening. Another portion shown, so as to leave a space or opening which will correspond with the side opening in the

away portion will stand opposite the opening, the cover is turned to such a point that the cutetances liable to thicken as they boil over, When it is desired to boil milk or other subthrough the screen opening and the sup-plemental chamber, while the contents of the main vessel will be prevented from escaping. around until the perforated or screen portion stands opposite the side opening in the boiler, when the water may be decanted off, passing contents to escape, the cover is simply turned the flange will prevent to a great extent the escape of steam. If it is desired to turn fluids out of the vessel without allowing the possible the escape of steam, the cover is put on in such a manner that the closed portion of

As may be seen at a glance, this kitchen utensil is one of general utility. The anxiety

ents its boiling over on the stove.

They ext., They purchased a diamond drill and propose drilling for coal, oil and gas. They expect to begin operations in a few weeks, and inpeot to begin operations in 2000 feet, if necestend sending a hole down 2000 feet, if necestend are and expect to demonstrate the nublem by mental chamber, which thus receives it and pre thus leaving a free escape for the cream or other overflowing substance into the supple-SEVERAL of the live citizens of Cle-elum, which the opening for certain purposes.

When it is desired to cook anything within grant country to grant as much as a construction of the construction of the construction of the construction of the Canadian Paoific, the poiler or vessel closed, and prevent as much as country adjacent is quite rich, and is being the cesses of steam of the country adjacent is quite rich, and is being the case of steam, the cover is put the construction of the case of the old \$750,000, while the prevent as much as a quite rich, and is being the case of steam, the cover is put the construction of the case of the old \$200,000 and the new iron steamer for construction as much as muc

ures to thwart any attempt to place lead on the tree list. Invitations have been extended to 30 other Boards of Trade to join in this movement for protection to the lead-mining. NEXT Monday there will be held in Salt Lake a public meeting in the interest of the lead miners of Utah, which will consider messbefore being "dead sure" that the process will lead all the others. One thing we long since learned in California, and that is, that only about one per cent of the " new processes" ever accomplish what they are expected to.

sary, and expect to demonstrate the problem by the lat of Maroh.

to work several hundred tone experimentally

noped that his process will accomplish for the Dakots ores all that is promised, but at the same time it will be advisable for the company

have devised a plan of working ore which he previouely could not work. It is greatly to be the opening for certain purposes.

. what not to do," other-vise he would seavely ylno sa gaibastatiwton pariesi gaivad ot ssessinoo eintolifed to quit sid no tained some points while

ore in question had been practically unworkable. Mr. Clark must have ob-

very tempting when it has the that the per ton treatment sounds 6\$ to tsoo a ta gnivas tneo

19q č8 lo estastang A

quently of the results acperiments at Cortez, Nev., in which he speaks fre-

have a hundred-ton plant." believe now that I can guar-

Mr. Clark sends memo-

-xe laubivibai sid lo sbast antee 85 per cent saving by leaching alone, and at a cost of \$5 per ton, if we

I .ssenisud sidt to tuo gai

fraction of the atock they are willing to give to around so that the soreen will stand opposite into our of the white.

raq sidt diw troqer to rettel gid gu shiiw eH until he returned to Nevada, where there were lesching works, that he lesrned "what to do." And it was this—he invented a process himselt.

Judging from Mr. Clark's report, it was not

.anoitareqo gainim ai seraliat San Francisco experts who make a specialty of "testing for a process," there would be fewer fellores in grining of the contraction ble kind of information. It is the sort of knowl-

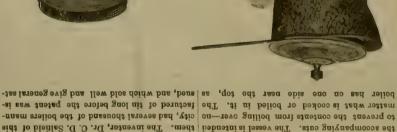
a sad lessey niam et the the main vessel has a of useless machinery, and stops the un-necessary expenditure of large amounts of money. If more people would come to those that it will not come in contact with the stove, supplemental chamber is considerably above the level of the bottom of the main vessel, so to work smelting ores, or smelters for lesshing ores, It prevents the purchase edge to prevent people putting up mills Mr. Clark ought to be well satisfied to learn "what not to do." It is often the most valua-

it than the Homestake. I shall continue in my experiments in order to become entirely famil-iar with the best way to mix and manage the sure of making as good or better thing out of money well laid out, in showing us what not to do, if nothing else. If a large mill be built, I am We found out obliefly in San Francisco what we found out ob. \* \* At first I thought it had noonly not seeless expenditure of your money in send-In his report to the Deadwood Smelting Company, Mr. Clark says: "To set your mind at rest at once, I will say that I have completeIy solved the problem of working these ores. W. cisco, and afterward Mr. Clark went back to Cortez, Nevada, and had ore tested by leaching.

from Neveda to find out a way to work ores at Deadwood, Dakota, Ore was sent and " tested for a process" by Mr. Luckbardt of San Fran-Mr. R. D. Clark has been over to California

What Not to Do.





over, for it is impossible to do so with these pots, no matter what is boiled or cooked in them. The inventor, Dr. O. D. Saliteld of this milk or anything else put on to boil will boil

bad values over, causing thereby bad odors and soiling the range or stove, is entirely done away with. The cook may absent her or one away with the least fast that the story of our contract of the contract

eradrad stnas lo traq mentron edt bas ogsidO done on this whart, as it is one of the principal abipping points of the products of San Luis San Luis Obispo bay. A very large business is ly in consequence. The illustration on this page shows the landing-place for the steamers of the Port Harlord. money. The time is not isr removed when San Lais will have several transportation strings to not bow, and she cannot isli to thrive immenser. to a rail as baon eauge worren a slies oak so less and the company to so the company has a derested profitable and that the so less and the so less and the so less and the less and so le

now ready for occapation, and a Raymond ex-cursion will arrive there on the 13th inst. THE new Hotel Del Monte, at Monterey, is

The Comstock pay-rolls for last month aggregated over \$250,000. The Consolidated California and Virginia alone paid out \$40,500.

I, 1887, \$1,850,000. The work which signesses to at the other and the signesses will figure up the aggregate to at

amounts, with those paid on other vessels built during the year, will figure up to wre also ready performed by the companies up to Dec.

amonnts to \$500,000, upon which the Government has paid \$300,000, and the work on Cruiser 5 now amounts to \$250,000. These

which \$150,000 was spent, for and the City of Peking, for

loseal figure. The repair of the ships slone, including the steamer Umatilla, upon

oo a setageregaa raev sidt

ship-building and repairing employed. The work of the Union Iron Works in

large number of men are steadily progressing.

The work on the orniser Charleston at the Union Iron Worke, in this city, is

are cheaper in the long ran to slian roiteful add nadt

it being found that they better class of steel nails, been a heavy demand from the local builders for the

ed into sixpenny spikes, brads and tacks, There has

been melted and transformevad nori qaroa to abaolrao present season, and many

est capacity during the

been running to their full"

are now being built in this city. The nail machines at the Oakland works have

general work. The Paoific Folling Mills are working a full

have a full gang of men, and have been busier than usual this sammer. From 40 to 50 men are kept employed. They are making considerable mining machinery and doing more or less

Sacramento, report a busy state of affairs. They

work of reconstruction somewhat, but active ef-forts are being made to have everything in bet-

shop suffered most from the free. The costly tools were rendered worthless and only fit for old iron. Scaroity of lumber has delayed the

Parke & Lacy, Tatum & Bowen and H, P. Greg-ory, and more are to come. The boiler shop was not injured to any extent. The machine

The workmen are busily engaged at the Fuirton Works on the new buildings, and betore very long everything will be in running order. Machine tools have been purobased from
Parke & Levy Tatun & Brown and H. P. Gree.

Foundry Notes.

Root, Meilson & Oo. of the Union Iron Works,

allim-straup rellor notgaituaH yaam taerg A

soft and brittle metal.

least \$2,000,000 by January 1, 1888.

ALL the material for the completion of the

ection of a breakwater are almost incalculable. Lick telescope has arrived at San Jose, and the Tacific Coats Steamship Company has telescope will be mounted without delay.

aidt morft engthen instead of dattening. From this

Worm-Forms.

Great flaxibility is given to this type by its form, which is more pighty onaditioned than form, which is more pighty conditioned that any two-axed form, when the extremities, one being in contact with the ground and the other dittons. We noticed a tendency in the compare types to lengthen; in the worm types there pact types to lengthen; in the worm type there their protective covering, the other to retrograde and become slow of movement. Thus requiring a shelly or horny armor for their protection, and become slow of movement. Thus requiring a shelly or horny armor for their protection, and become slow of movement. Thus requiring a shelly or horny armor for their protection, and become slow of movement, articulated worms. Segmented forms appear to have originally. The segmente in the higher genera are so speciallized that they now exist but as organic parts of a single snimal.

(To be Continued.)

#### Racts About Lightning.

Every one is familiar with the fact that lighting does not spring direct from cloud to cloud
to the earth, but pursues a zig-zag course,
This is due to the fact that the air is not equalthe path which offers least resistance to its passage. Damp air is a better conducting medium
then thy numid throughout. Electricity always takes
the path which offers least resistance to its passage. Damp air is a better conducting medium
than dry air; consequently, the lightning
selects the dampest route, avoiding the drier
strets and cones it encounters, and advances,
the opposite cloud, where it subdivides into a
now directly, now obliquely, until it reaches
the opposite cloud, where it subdivides into a
series, the fash, the air again contracts
distely after the fash, the air again contracts
with great violence and re-echoed among the
distely after the flash, the air again contracts
with great violence and re-echoed among the
colouds. The report reaching the ear of the
olduds. The report reaching the ear of the
douds, the schoes, the roll of the thunder is solved
Lie is a curious fact that, although the sound
lie is a curious fact that, although the sound
of thunder is exceedingly loud when hear

The schoes, the roll of the thunder is produced by the cohoes, the roll of the thunder is produced.

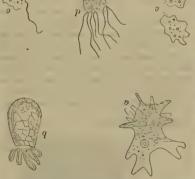
It is a curious fact that, although the sound of thunder is acceedingly loud when hear hear account of thunder is acceedingly loud when hear he can occurred to a camparatively oricumscribed. The noise of a comparativel oricumscribed, and the fact of marry a hunder favorable conditions, at a distance of nearly a hunder and while the sound of thunder does not travel over the involved the fact of the sound of thunder does not travel over the courrence of the thunder and the fact and the

## Beientifie Progress.

Psychic. The Three Forces-Physical, Vital and

[No. 13.]

The colonial nature of sponges is very clearly seen. They consist of two kinds of primitive seen. They consist of two kinds of primitive cellular units—the smoots and the interection of the same of the interest and contractic vesicle. A funnel-stape of a membraneus nature surrounds their unique fagellum, What the Hyronness their unique fagellum, What the Hyronness their unique fagellum, what the Hyronness their surfaces intusorial, the Codosigo, are to the sponge.



to besognony visition of the mark as a single that are in a start and the surface of the surface of these differences are the surface of the

area e. the polymorphic form of the common sponge.

The low organization of the sponge results from its not requiring the mouth or arms of the sor remains of the perturbation of the conditions of the perturbation of the poly is primitive departure from the gastrula, the simple stomach-sac. Here the wall of the body is pie stomach-sac. Here the wall of the body is currents bearing food are drawn into the general stomach, and forced out through the rail stomach, and forced out through the half, the cities, found in the flagelliferous infuences.

where the contribution of 
To Break Open Large Preces of Cast Irons.—Drill a hole in the part to be broken, as you can in the part to be broken, it a steel plug fairly tight to the hole, then plug the hole is of with water, and insert the plug and drive down hard with a heavy sledge; it will do the business every time.—Ex. MEW DEVICE FOR FILING.—A new idea is that of an Eoglish mechanic who, in the English Backenic, shows a device for filing flat surfaces "tearly and quickly." It consists of a framework fixed on the bench behind the vise, and by means of which a small wooden roller is pressed upon the file over the center

The results indicate that the strength of iron increases uniformly up to 500 degrees Fahr., while the ductility diminishes up to soout 300 degrees Fahr. It then increases until a somewhat higher temperature is reached, and then 500 degrees. Steel, subjected to a temperature of 500 degrees. Steel, subjected to a temperature of 500 degrees, but at this point its ductility was reduced to the steel of steels.

A WILD CHAIM.—An invention as an opposition of the are free from any the accounts given of it she accounts given of it she accounts given on it she cost of the cost of the cost of the cost of mechanical motor-power. The inventor average character and the cost of the cos A WILD CLAIM.—An invention is announced

INVENTOR AND EMPLOYER.—When a journeyINVENTOR AND EMPLOYER.—When a journeyand investigation in his particular line of business of improves the tools or processes in use
set to be able to produce more goods, or cheapen the articles of manufacture,
goods, or cheapen the articles of manufacture,
he is surely suitified to encouragement, respect
and remuneration. If I manufacture a certain
machine or tool that costs me \$300, and one of
the lathe bands or bench hands or apprentices
the lathe bands or bench hands or apprentices
arrangement of work or parts of work that
make that tool cost me \$270, and tool
of \$30 on each machine that ongth to go somewhere—not to me. But if the same man inwhere—not to me. But if the same man inwhere and tool or process that makes the same
where a new tool or process that makes the same
machine cost but \$270, and the improvement
in machine tool to process that makes the same
are the same price, it gives the anchory of the same
oreday and a greater demand, there is a
preday of vastly more due the author of these
myrovement's trom and a greater demand, there is a
oreday of vastly more due the author of these
myrovement's from me.—American Machinist.
There you was none.—American Machinist.
There you was Proce, it was not better
me.—American Machinist.

improvements from me.—American Machinist.

PIPES TOR WATEE-POWER.—Pipes for turbine installations about not be longer than is abooth the properties of the properties of the speed of the water the pipes, and as the friction also increases in the pipes, and as the friction also increases in the pipes, the speed should not exceed three about the most advantageous rate. Of course about the most advantageous rate. Of course about the most advantageous rate. Of course of the pipes has to be chosen to secure and loss of efficiency, as every increase or deval in dismeter. Any difference in the secretar and loss of efficiency, as every increase or deval in dismeter. Any difference in the secretary increase or deval in the section alters the speed of the crease in the section alters the speed of the crease in the section alters the speed of the crease in the section alters the speed of the crease in the section after the most in the section after the particular part of the pipes which is not of the properties of th

WORKING METALS BY ELECTRICITY.—The presthods of applying electricity, not only to the preservation of the esaily attacked metals, but preservation of the esaily attacked metals, are constantly increasing. Not long since we deconstantly increasing, Not long since we described Prof. Elihu Thomson's ingenious processes of electric welding, and now we have to chronicle still another metalod in which the the first of is employed as a medium for replacing the drill land planer, and other metaloging the drill land the mostly of course, take time before these various processes gain their place as regular facilities processes gain their place as regular facilities will eventually find their proper rank seems to of metal-working establishers will eventually find their proper rank seems to be tolerably certain.

FLY-WHEELS,—The bursting of a dy-wheel seems a rather more common event in Germany seems a rather more common event in Germany has no for built-up wheels, and smong other things the use of cast-iron arms for built-up wheels, and of dovetail connections of these to the rims, have been disapproved, of these to the rims, have been disapproved,

MECHANIGAL PROGRESS.

The Development of Steel.

Many deciring the standard of the American Many deciries as follows: The remaining the same found of the American Many deciries as follows: The remaining place in the production and more general adoption of steel production and more general adoption of steel arrow was recently very prominently referred to by Sir Charles Sir Charles Palmer, M. P., of the great Jarrow Shipbuilding and Iron Company. Sir Charles Shipbuilding and Iron Company. Sir Charles chested to impress the the the theory and in the deciring the steel was of a series of their calculations, and they could searchy settimate to what it." The introduction of a material giving a castent she hippured from the introduction of a material giving a higher arrength and greater safety, and flow might look forward to the sime when steel might look forward to the sime when steel build ships, and not only abide they would be the only material of which they would be the only material of which they would similar constructions. The Reduced Cost of Steel Production

The Reduced Cost of Steel Production Was greatly to be simed at, and when it was remembered how enormously the cost of turning out pig from had of late years been reduced, further economy in steel production might be alcemed a certainty. I may remark here that already we are promised a new afteel puddling furnace for which most remarkable results are bisimed. This durance the inventors, Messre, tons of mild steel in eight hours, with three tons of mild steel in eight hours, with three mean to the working of the furnace, on eight hours per shift, "at a cost much below any cost per ton ever made." It will, they boast, meet all the requirements to making any kind of iron or steel for shipbuilding, boiler-making, and iron or steel for shipbuilding, boiler-making, and likewise iron for chair, also gun iron.

and likewise iron for chain, slso gun iron.

Cost of Manutacturing Iron and Steel Reduced 30 Per Com.

Among the other claims of the inventors, it is said that the away turnace will be shown to produce 21 tons of iron or steel in 24 hours, at a marvelously small cost. There is a great save ing in manual labor, and the utmost concommy ingular labor, and the total cost of working ing in manual labor, and the total cost of working the patent process, including cost of pig iron, ingular, cost, labor for working turnace, appears, os all contracts, on the incention and including the process, general changes, etc., and allowing for wear of mach allowing for wear of mach charactery, can, the inventors assert, be made 30 per cent cheaper than any other working for made 30 per cent cheaper than any other order of process working st the present time. The steel process working down one of the patent furnaces is wery small.

The March of Steel.

The growing adoption of steel.

The growing adoption of steel is very apparent when comparison is made between the ourent but when comparison is made between the ourent bi-mouthly returns of the associated massisted material states of a few years ago.

Eugland, and the returns of a few years ago.

Eugland, and the returns of a few years ago.

Eugland, and the returns of 50,000 few to a see see of 50,000 per ton, but now the rate of production has fallen ton; but now the rate of production has fallen average price as low as \$22.75 per ton.

Therefore is as low as \$22.75 per ton.

Therefore is as low as \$22.75 per ton.

Two-Thirds Reduction in Four Years.

Since 1883 the production of iron by the associated makers has declined nearly two-thirds, and should this rate of declenation continue, a total extinction of the iron tracks is incretized. This condition may be fully grasped by comparing an average bi-monthly return of 1883 with the return just issued. They are as follows:

2017 Railes 220 Railes

edt at leest ot nori mora egnand edT ed anstament eroM Total. Total. Total and To

When it is remembered that in 1883 the price of iron plates was as high as \$32, and they are now down to \$22,75; while the fall in the price of angles has been nearly as complete.

NEW METHOD OF FORGING IRON AND STEEL.

WEW METHOD OF FORGING IRON AND STEEL, any be turned, an appearatus has just been contrived which, it may be said, involves an entried which, it may be said, involves an entried we method of working ento method sets. The method form, the may be applied to the manufacture of any small iron or steel pieces of turned form. Instead of being hammered or rolled to the desting moved in reverse directions, the grooves have moved in twe places, where he in two plates, which are moved in reverse directions, the grooves being moved in reverse directions, the grooves being in grainity to form at the places, where the from that of the plates in these grooves being and the safe of the plates, these grooves being the of the shape the process in England to the production of the finished before the first of the production of conical shot, in England to the production of conical shot, forged out to steel production of conical shot, in England to the production of conical shot, forged out to steel. The finished to the production of conical shot, in England to the production of conical shot, in England to the production of conical shot, forged out of steel, shall always the finished the fin

EFFECTS OF HIGH TEMPERATURE ON METALS,

—According to Engineering, some experiments were recently conducted in Portsmouth
dockyard with a view to determining the resistance of metals at different temperatures.

#### Ugarette Smoking.

A champion of the weed saye: "The Cabans, and or considerable Smoking.

A champion of the weed saye: "The Cabans, and or chies the consequence of the chies the consequence of the chies the consequence of the chies the chies the chies the chart of the chies of sweepings adulterated with the chies of chies." It is an instantant the chies of it goes a great way. Cabanish would throw even an old smoker into a swoon.

A little of it goes a great way. Canning the most popular and costly brands of oigerthe of it goes a great way. Canning the chies the chies the chies the chies of the chies, and the chies the chies the chies of the chies, and the chies the

To REMOVE FRECKLES.—The following oint-man and man was recommended by Dr., Heifman and others at the late Greenwich-meeting of the American Dermatological Association, being an ointemer tecommended by Worthelm, of Viennar, White precipitate, audinitate ointhment, one such one drachm; glycerine ointhment, one every other night, and in from four to six weeks the result would be found to be highly weeks the result would be found to be highly weeks the result would be found to be highly assistantly.—Her it stand 12 hours, then strain and apply two or three times a day—will, it is soon milk—let it stand in the most strain and apply two or three times a day—will, it is short time. Or, one ounce of lemon juice mixed with a quarter of a drachm of pulverized borst, and half a drachm of sugar, will also corked tightly a few days before using, and apply to the freekles ofton in a glass bottle, corked tightly a few days before using, and apply to the freekles occasionally, and they will soon disappear.

AUGENT VIEWS ON TEMPERANOE.—Mearly a century ago Johnson said: The water-drinker gides tranquilly through life without much esses to which he would be used so go on the water drinker esses to which he would otherwise be subject. The wine-drinker experiences short but vivid periods of rapture and long intervals of gloom. The wine-drinker experiences short but vivid ance of enjoyment, then, turns decidedly in the rape of the water-drinker, lesving out his favor of the water-drinker, lesving out his pier we shall be. Here, however, as in all pier we shall be. Here, however, as in all the rarge of health and latitude within the range of health and the his office within the range of health and happiness which the trange of health and happiness which the trange of health and happiness which the trange of health and estimate the range of nearty of this circle, and from it one recentric divergences should be narrowly watched and estefully limited.

generally believed at the present time that the peculiar potentons artering generally believed at the present time that the preculiar potenous matteria, the immediate case of infections diseases, are living germs or organisms, which are introduced into the body through the mouth or lungs. Consenant with this theory, it is accepted that these germs exist mere, are always somewhere, swatting, as it were, conditions favorable for their continued development. If this is believed, then it all diseases there is a specific germ or poison which is capable of giving rise to that disease and no other. The germ theory has been established by facts in that further investigation will yet prove that its propable continued in the control of the continued of t

# eist heat much longer than the ordinary door doors of any eiber material. It elevator or doors of any eiber material, it elevator and the waith the abacter openings at the different hardings so made the shall be different had the become a generated to close tightly, thereby hermestically scaling to so to see tightly, thereby hermestically scaling to come a generated to so the shall as the sond farmes generated with the building. It at the top of the shall a glass skylight was placed, a free crit for the flames would be afforded, for the heat would very soon break the glass and make the opening omplete.

A WEW ELECTRIC LAMP. —A lamp has been on exhibition in a commistee-room of the House of Commons, which, I hear, is to be used in minea, railroad carriages and omnibuses. The lamp shown was calculated to burn, with a light of 24 candles, 12 hours, as a coest of one penny, and the rine plate, which would also coest a penny, would have to be charged every 25 days.

A WOODEN TANK may be rendered capable of withstanding the effects of nitric or sulphuric soids by the following method: Cover the inside with a side with parafine; go over the inside with a sadiron heated to the temperature used in iron ing clothes. Melt the parafine under the iron so as to drive it into the wood as much as possible, then with a cooler iron melt on a cost thick and the wood as most a cost into the wood as most as possible, then with a cooler iron melt on a cost the wood.

PAPER GLASS.—An article called flexible glass is now made by soaking paper of proper transparent, polishing it when dry, and rub bing it with a layer of soluble glass is then applied and rubbed with salt. The surface thus produced is said to be as persected and the surface thus produced is said to be as persected the produced is said to be as persected the surface thus produced is said to be as persected the surface thus produced is said to be as persected the surface of the produced is said to be as persected the surface of 
To get the oil out of a grindstone, make the stone as not as safety will permit and then cover it with the oil as one whith and when the constant it may be scraped off and the process repeated until all the oil is extracted.

JAVELLE-WATER, used to remove tes and coffee, grass and fruit stains from lines, is made thus: Mix well in an earthen veesel one pound of sal-soda, five cents worth of chloride of lime and two quarts of soft water.

SALTARD VINEGAR applied hot is said to be one of the best things for oleansing bress, which should afterward be polished with fine sabes.

FEATHER CARPETS.—The Japanese make carpets of feathers, said to be both durable and beautiful.

THERE are 60,000 women farmers in Ireland.

# GOOD MEALTH,

Electric Spock. Premature Decreptinde Caused by an

Themsing the Deorephinde Gaused by single of the strength of t

# USEFUL INFORMATION.

EFFECT OF SALT WATER ON HYDRAULIO MORE.—Some recent (viernan experiments bardens to the socion of given interesting results as to the action of toest on hydraulio morters and coments when hose materials are mixed with water containing the experiments, a series of stone cubes of about 2.4-inch adge were united with pure water and in the experiments, a series of stone cubes of about 2.4-inch adge were united with pure water and in the order water order water cases was mixed with pure water and in a sir, and exposed for a period of 21 days to a sir, and exposed for a period of 22 days to a sir, and exposed for a period of 23 days to a serven days, the joints were tested, with the result, we to open time, the joints were tested, with the result, we serven days in a warm room. At the end of this time, the joints were tested, with the result, we conholding power; the coment mixed with pure officing power; the cement mixed with water condiding power; the cement mixed with water condiding power; the cement mixed with water condiding power; the cement was somewhat the the fact mixed with results of considered satisfactory, while the trainging the centre sultion was minimized by the exposure.

ordering a properties.

The properties of the content of the conte

DISAPPEARANOE OF OAR TIMBER.—It is said that one importantly of septending the tember especially is rapidly disapparating from Bartope. The consumption of oak pearing from Bartope. The consumption of oak pearing from Bartope. The consumption of oak in France is said to have double deviated in the following the cabit for wine casks alone, while 600,000 cabit feet for railway carriages, and 72,000 for building purposes. In 1852 but \$4,000,000 worth of staves were imported. Now \$30,000,000 worth are imported france contains 150,000,000 worth are imported france contains 150,000,000 acres; only 20,000,000 for an and 10 of the surface is covered with forest. Holf bart and both are large importers. North Ger. Holf bar, and both are large importers. North Ger. and beign are lessen onestly dennded of timport, and both are large importers. North Ger., and both are large importers. North Ger., but her begin to out down young trees. Morth Ger., and both are large innored railroads bave tria has sold her forests aimes railroads bave spain and Greeces are almost woodless, and the sold pain and Greeces are almost woodless, and the sold pain and Greeces are almost woodless, and the sold pain and Greeces are almost woodless, and the sold pain and Greeces are almost woodless, and the sold ber in throuduced. In Itsly no forests manin. Spain and Greeces are almost woodless, and the sold pain and Greeces are almost woodless, and the sold ber in throuduced.

New Substitute for Caoutohouc.—A St. Petersburg correspondent of the Manchester Courrier speaks of a new compound produced their speaks of a new compound produced the speaks of a new compound produced the speaks of a new compound produced that these are previously cleaned and boiled down with five per cent of glycerine, and as a colved. Of this mixture three parts are melted solved. Of this mixture three parts are melted thromate of potash. It is then cast in molds and left to dry in a dark and well-ventilated chromate of potash. It is then cast in molds place. The articles produced with this preparation have a remarkable resemblance to vulcantification bayes a remarkable resemblance to vulcantification be very hard, less glycerine and more bichromate of potash is used, and in this required to be very hard, less glycerine and case the objects are dried under pressure between metal plates. By the employment of the objects are dried under pressure between metal plates. By the employment of corel, malachite, etc.

A HEAVY STEEL CASTING has inst been compound in the core in the core of corel, malachite, etc.

A Heavy Stree Casting has just been completed in Sheffield, which, it is said, is probably the heaviest ever made in England. The bay the previest casting is 62 inches, and its weight 70 tons. The besting operation lasted weight of the fureace, the glowing mass glid. And out of the fureace, the foreign with porter-bar and balance-weight made a total weight carried by the crane of at least 120 tons. This ingot was pressed into shape in a 3000-ton forging pressed.

FIRE-PROOF ELEVATORS.—It is quite possible to make elevator shafts fire-proof, says Building, which journal makes the following suggestions: The interior of these shafts should be lined with bright tin, securely lastened to the woodwork. The best fire-proof doors that are made are contracted of wood, npon which sheeks of this are structed of wood, npon which sheeks of this are placed in such a manner that the flames cannot penetrate at any point. It has been repeatedly penetrated that doors to this kind will re-

# Еизічееріна Дотея,

A Tribute to Engineering Skill.

The following tribute to the skill of the engillof the World the World at Schound the World areas of "Kound the Aristopher to the American Burat Home. As an artistic piece of world-painting it will bear reading more than one world-painting it will bear reading more. "We are on the famous Gothard line, the

pineer is from a series of "Round the World to the World and the World Hong." We are on the famous Gothard line, the piece of world-painting it will bear reading more challenge your admiration. There are people and so once called insurmountable. There are people and worked in the ballenge your admiration. There are people and painting it will bear reading more callenge your admiration. There are people and painting it will bear reading more at the work and in the work wall get there—over, will reper age age and it would be work and the work to get the contraint of the work and the work to get the work and the work of the work to get the work to get the work and the work to get the work to get the work and the work to get the

EXTRACTING CLAY FROM DEEP PITS. — A method of extracting clay from deep pite by method of extracting clay from deep pite by meshoa of pumping has recently been introduced on a large scale in Rent, England. In one case, free pipe-line from the clay bank to the works is over 14 miles. The pupe used is six inches ciqual to 750 pounds to the purps is equal to 750 pounds to the from clogging, clean order to keep the pipes free from clogging, clean about 20 minutes after closing work. The about 20 minutes after closing work. The holower and of the column is of clay extraction is much cheaper than the ordinary way of digging whole pipe is washed clean of clay extraction is claimed that this system of clay extraction is digging. The cheaper than the ordinary way of digging and holosing in buckets or cars. The clay is much cheaper than the ordinary way of digging and botter is the ways the ordinary way of digging and botter than the public and all works.

been lately devised by a French military on Varantize has been lately devised by a French military on gines, M. Bonnetond. He uses the expansive from portions of wet ground in which foundations to device the wetge ground in which foundations are to be made. The method is now in practice in the construction of a fortified processes a fact bored 10 or 12 feet deep and about 14 inches wide in the or lately of the carting of a fortification of a fortified of the water is thus driven is a passed a string of the cavity, over a yard wide, which is the produced and it does not reappear till after the cavity and introduce quickly. The workmen thus have having the setting oncrete. When the water tells show then the water tellurs it cannot injure the foundation. A rapid rate of progress is realized by this method.

THE LARGEST DAM.—Arizons is about to the total and the country. The construction of th

An Irricating Canal, 110 miles long, is about to be constructed in Mew Mexico, which is expected to irrigate over one million acres of land. The enterprise will involve an out-lay of \$1,000,000.

"Wood Type" is being made from paper pulp, mixed with lineeed oil, dried, pulverized, pressed into a mold, and heated therein to con-solidate it,

Nevada.

Nevada.

Alevada.

The road through Boston ravine, which road is smaller orad through Boston ravine, which road is smaller orad through Boston ravine, which road is settlerated to Mill steller of Oras Valley, is being marked the stone for that purpose is bauled cadamized and the stone for that purpose is bauled now the old waste dump at the Rocky Bar mine, of the rock was put down and John Mulroy was of unastrathal to developed stone. He spice a chunk be borrowed a harmer and eracked open the lump of quarts. The fragments of the cracked a round he lump to get them are the under the stone held consult and the stone held consult and the stone held the road and the stone held the stone of the

Nevada.

Earloce the Copperopolistics to rejoice.

Earlopeado.

Earlopeado.

Bi Doredo.

Consolidation.—Placetville. Democrati, Dec. 3:
Side, which before long we hope to see of benefit to that section. Mr. Chester, the principal owner of Dan Wickbam in the Taylor mine, and report of that action and Rosencians will be consolidated and an effort made to place them on the market. Base if that Taylor and Rosencians will be consolidated and an effort made to place them on the market. RICH ONE,—Georgetown Graselfo, Dec. 3: We know an entire that T. G. Billy of Greenwood beas struck some rich ore in the Garfield mine in Greenwood beas struck township. Bert Abbey and Mr. McMabill, who are some rich or in the Carfield mine in Greenwood beas such as the days ago, the result of a short tum.

Rew days ago, the result of a short tum.

Caleverae.

Caleverae.

West Point.—Cor. Calaverae Chronicle, Dec. 3:

The mining interest in this vicionity leads the van,
and the sound of the steam-whistle is thered in every
direction at morning, noon and night. About 250

UNION SHAFT.—Cor. Angels & Kecovd, Nov. 89;
It is now definitely settled that next week the Union
Shaft will be exhausted of wateri an event that
causes the Copperpophistics to rejoice.

El Doredo.

CHEROKEE.—The workingmen at the Cherokee mine, under the management of Wm. Gregory, have been paid the last cent of the back-pay due then, and all wages up to the present time, so that they both and all wages up to the present time, as the they position, there is no doubt that inside of two years the mine will be entirely out of debt, and everything can be run on a cash basis.

Butte.

MAGALIA.—Oroville Register, Dec. 1: Some 32,oo pounds of machinery have been shipped up to
the Magalia mine lately, consisting of boilers and
bumping machinery to be used in litting the water
from the mine. It will be several weeks yet before
the tunnels are drained so that gravel can be taken
the tunnels are drained so that gravel can be taken
the finite rich mine, Singer's interest having been purin this rich mine, Singer's interest having been purchased by Mt. Abbott.

CHEROKEE.—The workingmen at the Cherotecmine.

the worken to to as men on their claim, preparing to the wholesh of of Arbeit whining Co. are funding white operations.

MIDDLE BAR WOTES.—An important strike was made at the Sargent mine this week. On Saturday the waster was taken mine the optom of the work of the waster was taken from the bottom of the tendency of the work of the control of the work of the control of the work of the control of the work of waster was a look of waster was a look of waster waster was a look of waster waster of the care of work of waster waster of waster waster of waster waster of waster of waster waster waster of waster waster of waster waster of waster waster waster of waster waster waster of waster waster waster waster

GILLENWATER.—Ledger. Dec. 3; This quarts.

Can on Sutter creek, is looking splendidly. A cago, or a mile below Volcanne on Sutter creek, is looking splendidly. A wide. Six tons of the stranger cree been run 250 feet, showing a fine ore body wide. Six tons of the rock, taken from all parts of the stranger. The ledge is six feet of the stranger of th

CALIFORNIA.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

MINING BUMMARY.

From Igo.—Cor. Couvier, Dec. 3: Robinson & Co. are taking some good gold ore from a ledge on Co. are taking some good gold ore from a ledge on the west aide of Clear Creek, below Muletown. Ledge looks promising. O. Engle found rich ore on his Flicker, in Kanaka. Whit. George's Muletown ledge is looking so well, he is intending to put up works on Clear Creek, for reducing the ore. P. Gibney is now croscouting his Grand Central, in Gibney is now croscouting his Grand Central, in the head of Bogus Gulch. The croppings are over

BLUE HILL MINE.—Julian Soutined, Dec. 3: The Blue Hill is situated two miles coutbeast of Julian. Blue Hill is situated two miles coutbeast of Julian. It was discovered in 1873, by James Stratone extracted extracted extracted extracted extracted extracted extracted extracted from the first one extracted was found that the wein bad year or so, it was found that the wein bad ideased it out to different parties, they payling one-half royalty. Hundreds of men bave list one with the coverest the sind from too to goo feet. The cowners then it is one with the hill it is perforated like a pepper-box. The Hill is to specifie to the fact of the same belt as the Famous sted in size and it on the same belt as the Famous sed in size and is on the same belt as the Famous taking out ore that will mill from \$50 to \$125 per too. For the last to be same belt as the Famous too. For the last to years, and taking out ore that will mill from \$50 to \$125 per too. For the last to \$75 per \$15 
San Diego.

Gase mine at Damascous.

CLEANUP.—Last Saturday a cleanup of 47s ounced the State, being equal to the preceding mine at Damascous.

CLEANUP.—Last Saturday a cleanup of 47s ounces from a three weeks' run wast made at the bridge of the preceding month, was made at the bridge of the preceding month, was simpled to San Francisco last might in three bars, weighing 480, 3st and 270 ounces. The largest and about 7 inches long. It constanted something over \$6.00.

The Hidden Treasure company sells this gold at the price was 2s, inches thick, 4 inches wide, and about 7 inches long. It constanted something over \$6.00.

The Hidden Treasure company sells this gold at the fine occasionally rupuning as high as 938 fine, and for the first occasionally rupuning as high as 938 fine, and fine in bring the corresponding price in San Ariancisco.

Iowa Hill.—Cor. Placer Hevald, Dec. 3; The mines in this section are doing well. The Moning Gold, worth and the ource, from \$5 carloads of gravel. As and the size and almose were freshy not of the mill; and realized 61 ounces of gold, worth \$5 per ounce, from \$5 carloads of gravel. As and the meaning the feet of the division of the french Co.'s property at Red Point, man feety day, more men will be size and thou and humber to the delivery of a put of the carlo for a feet of say that the pew dump and flumes were feet meaning for the delivery of the division of the french Co.'s property at Red Point, mes were feet meaning factor the mild.

FOREST HILL.—Cor. Placer Havald, Dec. 3; Work is progressing tapidly in the Live Ocki; the progressing tapidly in the Mayflower tunnel, the Montk is progressing tapidly in the Mayflower tunnel, the Montk is progressing tapidly in the Mayflower tunnel, the Montk is progressing tapidly in the Mayflower tunnel.

San Diego.

FINE GOLD.—Placer Republican, Dec. 1: Specinies of coarse and fine gold from the Red Point mens of coarse and fine gold from the Red Point traing bave just been tested in San Francisco., Confine, while the more valuable. The fine gold went 920% fine, while the other went 920% fine, a mugget containing 2 y8 ounces being worth \$53.4t. or \$19.2t an ounce. This is as high-grade gold as any found in fine State, being equal to that from the Mountain Gate mine at Damascus.

Cate mine at Damascus.

Placer.

Decours Agnue — North San Juan Timer, Dec. 2:
Discours Agnue.—North San Juan Timer, Dec. 2:
Business called us to French Corrisl last Monday.
We found the place almost as dull as it is at North
San Juan. The closing down of the Milton mine
threw almost every man in that once thiving town
out of employment. It is enough to drive men distracted to bave their homes made desolate by an unrighteous decree forbidding the working of all
righteous decree forbidding the working of all
righteous decree forbidding the working of all
rested to bave their Dydandic process. The inhabitants of French Corrisl, Sweetland and Birchville
are sadly discouraged.

Placen.

to separate the gold from the quartz, and be was rewarded by getting gold from the quartz, and he was rewarded by getting gold for which he obtained 570.

In a little while thereafter, Thos. Daily, a 15-year-cadam from the waste dump of the same mine, and do doing he realized 4,0 from his discussory. The old dump has been culled over for many years, but those doing has been culled over for many years, but those doing has been culled over for a many years, but those doing has been culled over for a many years, but those doing has been culled over for a many years, but those doing has been called over for many years, but those doing has been called over for many years, but those doing has been called over for many years, but those doing has a many fire searchers and the character of the total of the character of

waenoe uterrior.

Con. Cal. Va.—Enterprist, Dec. 3: Good headway has been made during the week in the several
duits and winzes on the 1300 and 1400 levels. On
the 1435 level the west drift from the bottom of the
winze sunk below west crosscut Mo. 2: is in highriess has been made in the several drifts and
winzes. The one assays will average about the same
sa last week, and about the usual quantity has been
spisch week, and about the usual quantity has been
shipped to the several mills. Washoe District.

## MEVADA.

RAIN.—Tuolumme Independent, Dec. 3: The rain bas encouraged a hope of renewed propertly in cycyty branch of business, miners and farmers being especially joylul of expected results. The new co-stamp mill on Black Oak mine, at Soulsbyville, started up on Wednesday. It is expected that this started up on Wednesday, It is expected that this mine will come to the front yery shortly.

pay. Under-Sheriff Tompkins has some very rich pays. And you were advanged to the Education of quarts from the Quarts Hill mine, Scott Bar.

Looking Well.—Journal, Dec. 3: It is reported that the Bead working on very rich ore; the chick the Linde Gem in the Deadwood district from the Ghson from a seam to 18 inches in width and is seen taken from it, the ore goes about \$\$\frac{1}{2}\$\$ Some result of the ton.

EAST FORK ITEMS.—Enterprise Co. are cruebing come result with the total wi

COLORS FROM THE MINES, — Yfeks Union, Dec. 1: Martin & Alteky Union, Dec. 1: Martin & Abbott will develop their Cherry Circle Martin & Abbott will develop their Cherry Martin & Abbott will develop their develop their develop their will be seen opened up a valuable piece of property. The ledge is rich and permanent. Hegler Brothers & Addrich, on Humbug, ste mining and crushing rich rock, on thumbug, ste mining and crushing rich rock, included a gounces. Another rich strike in quartz has beed that yn-leded as ounces. Another will be seed to the most will mine, dwned by Sheperd & Co. The new ledge is equal to the old, both in just above the Quartz Hill mine, dwned by Sheperd & Co. The new ledge is equal to the cold, both in wirght & Fleicher of Co. This new ledge is equal to the cold, both in wirght & Fleicher of the man work their extensive cold includence of the most important mines in the country with the important mines on McAdama creek will be placed in position next on McAdama creek will be placed in position next week. With the improved facilities for working the grant facilities is now the control on McAdama creek will be placed in the season why the mine should not next mines and the season why the mine should not next seem of the control of the man, which it has done in the season why the mine should not seem of the man, which it has done in the season why the mine should not bar. Trillety.

Trillity. The new trill mine, a pour Bar. Trillity. The congress of the start in the seem of the man which the placed in the countries of the man which is the seem of the mines. Trillity of the construction and the control when the countries and the mines where the man which is the seem of the mines of the man which when the seem of the man which when the mines of the man which when the mines of the man which when the mines of the man when the mines of the mines o

Siskiyon.

workmen are now at work sinking the well, BIOTTE.

JALUABLE GOLD MINES.—Mountain Messenger, Dec. 3: The Wide Awake company, Alabama Hilli, cover before the snow began to fall. All their buildecover before the snow pegan to fall. All their buildecover before the snow pegan to fall. All their builder ower before the snow pegan to fall. All their builder of salurday last. The boys came down builday and salurday alser. The boys came down building to go to work inside and open out their ground, with the brightest of all bright prospects before them.

I bands are being employed at the brightest of all their ground, with the brightest of all bright prospects before them.

I bands are being employed at the Kentucky of all bright work of the mill has progressed finely. The building is inclosed and the progressed finely. The milding is inclosed and the progressed finely. The mestimery is under way. The capacity of the mill will be five stamps, and it was expected to have it ready for crushing Christmas. However, the storm may cause a little delay.

Salettyou.

Salettyou.

San Luis Obston.

San Luis Obston.

Coal mine. "San Luis Obston.

Coal mine. "Discussion of the Southern Pacific ocal mine. The superintendent has been to the southern Pacific oral mine. The superintendent has been to the mine. The company will soon build a railroad to the mine. The Cholame oil wells are about a 4 miles. A tew days since an engine was sent up there, and the workmen are now at work sinking the well.

Sleptra.

too feet in width. He has suspended work for the winter on his Arizona. J. P. Wright is finding high-grade gualphureis in his mine. The present storm will enable him to start his arstra. Hubbard strates, and have it running on Blue Bell note. E. L. Ballou's stratts is crushing his Manzaria, each chart size truming on Blue Bell mits, ore. Bubanks & Bennett are taking out shipping ore from their Clinar mine, mear the head of Bagle Creek, He has been having on big Centennial mine, mear the bead of Bagle Creek. He has been having some trouble working on his Campara. All quiet at present, with would-be '' impers." All quiet at present.

MEXICAN.—On the 1300 level the west crossout from the north drift is out azs feet.

VELLOW JACKET.—Work progresses as usual on the rico, 1300 and 1400 keels. The shipments of

ANDES.—In the north drift on the 240 level some-very promising low-grade quartz has been encoun-tered,

ALPHA.—Good progress is making in sinking the ALPHA.—Good progress is making in sinking the seel seel. When this level is resched, drifting for the new vein will be in order. Scorpton,—On the 300 level have started drifts work north and south in the vein material. This work is being done through the drain tunnel.

Union Cox, —On the 'raoo level the northeast drift was advanced to seet; total length in Union ground, 346 feet.

Eventually and the north drift on the 240 level some ANDEE.—In the north drift on the 240 level some

West end of the 472 level the north drift from the west end of west crosscut. No. 6 has been extended for feet, The formation in the skee is porphyry and quarts.

BELCHER.—For some time past the only work done was in the way of prospecting. Mow, however, the extraction of one will be resumed, as there ever, the extraction of one will be resumed, as there the mills of the mills.

ALPHA.—Good propress is making in sinking the

resumed.

A.T.A.—The mill is running steadily on ore from the 72S and 1150 levels. This one averages over \$500 and 1150 levels. This one averages over \$600 and 1150 levels. This one averages over \$600 and 1150 level average and average are controlled to the other apparatus in use.

Strange J. Wav.D.A.—On the gao level the southwest drift, started at a point and the main north drift, started at a point and the shaft, was advanced to feet; total tast feet from the shaft, was advanced to feet; total and diastr giving low assays.

Bengh, 860 leet. The drift is in a mixture of clay and diastr giving low assays.

OHOLLAR,—The east drift from the Sharon shaft, on the 550 evel, is out 122 feet, north drift Mo. It has got level is out 125 feet, into south drift thom the 350 level is out 135 feet, and the north wince on the 350 level is out 55 feet, and the north wince on the 350 level is out 125 feet, and parts of the mine are looking well.

CROWN POINT.—Considerable prospecting has been done in the several levels and a starte amount of ore opened up. Now that there is promise of seven opened up. Now that there is promise of good milling stage of water in the Carson river, the good milling stage of water in the Carson river, the retraction and shipment of ore will sit once be recursed.

BALTIMORE.—The west drift on the 338 level fapped about 35 inches of water, which filled up the shaped about 35 inches of water, which filled are now fast draining it out. When the water rushed in it bought distaining it out. When the water rushed in it hee early out a piece of ore assaying over 500 at 000. In the early days a body of good ore was found it as shalf camb far to the west, and the ore now out is supposed to far to the west, and the ore now out is supposed to be the same.

GOULD AND CURRY.—The west crosscent, seo level, the been extended as feet; total length, too feet, This crosscent has passed through streaks of quarts and vein matter giving low assays. The face is in perphyry. On the 425 level the east crosscent has perphyry. On the 425 level and the been extended 30 feet; total, 340 feet. This drift cut the east of any and work in face has been stopped. Have started as uptaise in this crosscent to prospect streaks of ore passed through.

extended s2 feel. It continues in quartz of the same kind dendinoded in last report.

OCCIDENTAL.—On the 48 level, have extracted s3 raise, too feet on the slope below the upper tunnel, raise, too feet on the slope below the upper tunnel, have extracted s5 tons of ore. There has been raise, too feet on the slope below the upper tunnel, have extracted s5 tons of ore. There has been base extracted s6 to sell feet, and feet s6 feet, for so feet in the cort of the winze has sainped to the Bretzen and feet s6 feet. The been extended a total distance of s3 feet. The seast crosscut nouth of the winze has east crosscut nouth of the winze has been extended a total distance of s3 feet. The bear of the winze are repairing the old chute.

BEST AND BELLERS, AND the s2 level west crosscut in the case of quarts of no value, the sain from the same level is compartment winze has been extended a total length of 140 feet. The total depth of some side of quarts of no out s3 feet, prot drift on the c30 level is out out s7 feet, west drift of the cgo level is out out s6 feet, west drift of the cgo level is out out s7 feet, west drift of the cgo level is out out s7 feet, morthwest drift on the c5 level is out out s7 feet, west drift on the c5 level is out out s6 level. The compartment winze has drift on the c5 level is out s6 level. The drift on the c5 level is out out s7 feet, and the west drift of the Wing station) s70 out s6 level. The drift on the c5 level is out ones of the same level, is out s6 level. The mine is looking well seat of the west of the west of the copenings on the cser rail for the Wing station) s70 out s6 level. The conting on ore to ore are stored in psny by psny began running on ore trons the mine last Tues-grown of the same level is out one can be seed of through attamps of the contract of the care from the care to ore are stored in the sear of the care from the cover of the care from the care of the care or or or see stored in sear or or or see see stored in the seet of the seet of the seet of the cover of th

SAVACE.—On the 600 level Mo. 2 west crosscent from the south lateral drift has been advanced 48 level. Are extracting ore from Mo. 4 east crosscent subt from the shaft on this level, also from the 51th of the 700 and 6th floors north from the shaft. On the 700 and 6th floors north from the shaft. On the 700 level are enlarging and repairing the stations and extracting ore. On the 850 level are stations and extracting ore. On the 850 level are stations and extracting ore. On the 850 level are stations and extracting ore to connect with the 800 level. On the 100 level are stations in the 100 connect with the 800 level are stations and extracting the one of the Mexican mill. On account of the searcity of the Mexican mill. On account of the searcity of the Mexican mill. On account of the searcity of the Mexican mill. On account of the searcity of the Mexican mill. On account of the searcity of builton on hand (at the Carson mine) amounting to \$45,000.

,HATU

DEVELORMENTS — Delevute Herald, Dec. 2: The developments the past week in the Relief's west and estrainty the Relief is fast of the big mines, and estrainty the Relief is fast opening up into a fact per development in the past week in the Relief's browners amine. The Millier Bronders know to prove it. The Milmie Moore as the "old a faction of the recent find in the Queen, and will soon have of the recent find in the Queen, and will soon have of the recent find in the Queen, and will soon have end to the recent find in the Queen, and will soon have of the Elimors is one of the genes of Idaho. It sflorids employment to 125 men, and the amount of one employment to 125 men, and the amount of one employment to 125 men, and the amount of one employment to 125 men, and the amount of one employment to 125 men, and the Release of Idaho Schekemar, Dec. 2: A series of a state of the future of this camp is assured, and next spring will see it as a second of the facts of mining the past we supplied to 125 men of the foreign of and 125 men of the foreign of and 125 men, which will see it considerable force of men, which will soon be inconsiderable force of men, which will soon the facts of the Michael Mahoney, who basts employment seems of shances of showing up a mine within a fact the charmer of specs on different levels, and there is one in three places on of the Minnis on the soon of the facts of the considerable force of showing up a mine within a front again during the past worthing in the facts of the Christmes Endowers for Wood River to see the Parker get to the foor to see very Edot. It would be an foor the Christmes and gray copee, and assays an average of 150 of the Minnis Moore mine cut into a vein or othuc of the Minnis Moore mine cut into a vein or othuc of ore bully four let in width. The ore is only declar mine cut into a vein or othuc of ore luly four let in width. The color level lens and gray copper, and assays an average of 150 or luly con the soon of 150 or 
PLOAT.—Black Hills "Plonter," Dec. 6: The Hester A Company is shipping ore to Omaba as the rest of one carlocad per day at present. First shipping ore to of one carlocad per day at present. First shipping one to offer the core will be a little over \$4.00 to the core of the core will be a little over \$4.00 to the core will be a little over \$4.00 to the core will be a little over \$4.00 to the core will be a little over \$4.00 to the core will be a little over \$4.00 to the core will be a little over \$4.00 to the core will be a little over \$4.00 to the core will be a little over \$4.00 to the core of the Colden Reward borgue on the company will be interested to learn that annual representation work has begun on the company's claims, for the Carron, is found. Work on the Lap Plata turned of the same character, to feet wide and sampling \$4.30 to the core are beginning to come in, and greater confidence is now had that an ore body will be encountered to the confidence with in the curveic found on the surface and of which purposes it was started. From John A. Gaston, who returned to Deadwood yesterday, after a week's visit to Minnespolis, it was learned that the 'Ponter turned to Deadwood yesterday, after a week's visit to Minnespolis, it was started. From John A. Gaston, who resure on the confidence is were to sesert it a success. The ore shipped by the Retriever Company had not reached its destination when Nit. Gaston lett, consequently he heard nothing concerning it.

HAWKEYE — FIR Mountain Viva. Dec. 3: The structure of the fore strengt a fall where the first structure of the fore structure of the forest structure of the several properties near the bread of State truct belonging to properties near the bread of State truct be several properties near the bread of State truct be several properties near the bread of State truct be several properties near the bread of State truct be several properties of the several properties and quantities and state of state structure of the several properties of the s

ORE SHENEAT.—C'Hon Clarifor, Dec. 7: The friend braither, received last week the returns from the control of the more than the control of the more than the control of the more than the control of the c

## ARIZONA.

Hewthorne District.

[APANTA ORE.—Walker Lake Bulletin, Dec. r.]

The Kinkead mill is now unanney on Lepsanes ore, A run of very rich rock from the Montread was finished by vesterday.

Rebel Creek District.

Rebel Orleek District.

THE OHIO MINE.—Silver State, Dec., T. Presi-

ing-wall of the vein.

Euroke District.

Ore Shepiral A. Sentinel, Dec. 3: During the past week of shepiral and the district of the district sheps of the district shep of the district sheps of the d

continued the experiment of th or from the celebrated La Bellevue mine to Denver for treatment.

Mirius SALEL—Grant's Pass Couvier, Dec. 2: 
Mirius SALEL—Grant's Pass Couvier, Intria Bullon have a deposed of his fund interest in the Dutch mire on Powell creek to Messrs. Intria & Gray of Eugene City, for \$5000. The latter gentlemen are making preparations to commence milling operations at once. They have now in sight a nignoperations at once. They have more milled at the Kiessling mine, where the new Payne quantities, and have made arrangements to have it unilled at the Kiessling mine, where the new Payne of the Steam Beet mine on Grave creek, is manager of the Steam Beet mine on Grave creek, is making preparations for some big work during the coming preparations for some big work during the coming base overything in applie-pie order for the first water. Base overything in applie-pie order for the first water.

MEW MEST, The Loc Christ, —Kington Mest Stockton has become a pretty reliable shipper of the control of the mine of the control of the control of the mine o

MINING AND SCIENTIFIC PRESS.

## F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS, Legulintabl Roller Cluartz

Mining Machinery of Every Description,

Steam Engines and Shingle Machines.

SAN FRANCISCO, CAL.

No. 45 FREMONT STREET,

Centrifugal Roller Quartz Mill.





окк скомнки

## PNEUMATIC PULVERIZER

POWERFUL OPPOSING CURRENTS

10 TO 200 TONS PER DAY, ctal effect upon Sulphurets and ores containing roset Ger-Pulverizer, the extremely small and inexpensive wearing pa sration. The Company is prepared to furnish complete plants for

PHEUMATIC PULVERIZER COMPANY

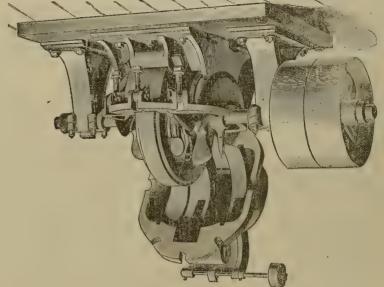
2 and 4 Stone Street, NEW YORK.

Write for Particulars.

E. A. LUCKENBACH, Sup't.



ENTRIFUGAL ROLLER



most rapidly and economically. Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Cement Rock, and other

All substances when ground leave the mill in a finished state—no regrinding being Feed. Wearing parts of Steel and Forged Iron.

HUNST AND SCREEN MILLS,

HOOKER & LAWRENCE, General Agents,

145 BROADWAY, NEW YORK ERISBEE-FIGOR MILL COMP

And 461 Howard St., San Francisco, where a Mill can be seen in operation and ores will be reduced at reasonable rates.

THE GIVNT POWDER COMPANY

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Eto

TATUM & BOWEN,

Several Mills are now in the mines doing excellent work. The "Economic" is not only a mill for small mines, but we believe it is destined to supersede the old stamp in mills of the language.

Goes with each Mill. We also have a suitable

We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the rate pidity (300 strokes each per minute) which they run. There are 4 shoes in each stamp, so that there are 4300 strokes of the shoes on the dies per minute. Less power is required than in any other mill to do the same smount of work.

The Mortar has screens at both ends, giving ample discharge. There are no cams or tappets to wear or be adjusted. The stamps adjust themselves as the shoes wear.

DOORFE "ECONOMIC" STAMP MILL,

AUTOMATIC ORE FEEDER

Breaker.

The Satest and Strongest High Explosives in the Market.

GIVAL BOWDER OF DYNAMITE,

GEFVALINE-DXNYMILE' Stronger than Dynamite and even Safer in Han NOBEL'S EXPLOSIVE GELATIUE," which contains 94 per eent of Ultro-G Of Different Strengths as Required.

GENERAL AGENTS, SAN FRANCISCO CAL.

SAN FRANCISCO, CAL.

10DZON BOWDER IMPROVED.

BANDMANN, NIELSEN & CO. FOR EATHEROADS AND IAND IAND CLEARING. Is throughter to tour times strong, pulverizes better now yender, and is used by all the Pailroads and Gravel Claims, as it breaks more ground, pulverizes better naves the lied of the said the said Gravel Claims, as it is selvedy.

CAPS and FUSE for Sale.

34 and 36 FREMONT STREET,

ROCK

Liberty St 96 San Francisco PARKE, LACY & CO., Agents, SUG BOIDERS, 300 Sizes TIDGERMOOD WILG CO

# Retallurgy and Ores.

## SMELTING and LEAD CO. SELBY

COLD AND SILVER REFINERY 416 Montgomery St., San Francisco.

And Assay Office.

Righest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE,

LEAD PIPE,

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO.,

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

CHEMICAL APPARATUS AND CHEMICALS, DERUG OISTS' OLASSWARE AND SUNDRIES, ETC. 114-118 Pine Street, - San Franciscos, OFTINISS, C. DERUGS, DERUGS

Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

Mear First and Market Streets, S. F.

С. А. Клокнаврт, Мапакет.

Assaying in all its Branches. Отев worked by any Proсева.

Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications furnished for the
most suitable Process for Working Ores.
Special attention and to Reminetions

Special attention paid to Examinations

Mines; Plans and Reports furnished,
O. A. LUCKHARDT & OO.,
(Formerly Huln & Luckinsridt, )
Mining Engineers and Metallurgiets.

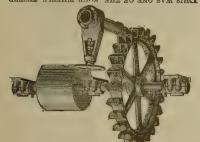
METALLURGICAL WORKS.

818 Pine St. (Basement, dorff Street, - SAN FRANCISCO

Assaying and Analysis of Ores, Minerals and Waters.
Mines Examined and Reported on.
Treating Instruction given Treating Ores by in
oved processes.

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL.



AHIS WAS ONE OF THE FOUR WHEELS TESTED A. by the Idaho Company at Gress Valley, Cail, and rave 80 2 per cent, distancing all competitors. Send for itrulars and guaranteed estimates.

L. A. PELLTON, Nevrad Olty, Osl. Acauts—PARKE & LACY, SI and 28 Fremont Street San Francisco, Cal.

L. PETERSON, MODEL MAKER, INVENTORS, TAKE NOTICE!

258 Market St., N. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds I metal, tin copper and brass.

ASSEND FOR CATALOGUE TO QUARTZ MILL, Hantington Centrifugal

lies and TROMMELS. T CORNISH BOLLS,

ENGINES AND BOILERS.

FRASER & CHALMERS

This Alill as a Crusher and Pul-veriver is without rival. Is in operation in lead-

PUMPS,

WACHINERY,

CORNISH

**ENCINEZ** 

PUMPING

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

HOISTING

ENCINES'

HALLIDIE'S

MIKE ROPE

TRAMWAYS.

DENVER OFFICE: No. 248 Elghteenth Street, Denver, Colorado.

MEXICO OFFICE: Mo. 11 Calle de Juarez, Obibuahua, Mexico.

JAMES LEFFEL'S

NEW YORK OFFICE:
ROOM 48, No. 2 Wall Street. GENERAL OFFICE AND WORES: Fulton and Union Streets, Chicago, Ill.

UTAH OFFICK-SALT LAKE CITY, UTAH.



# COLD MINERS

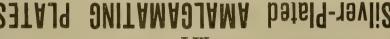
Quartz, Gravel and Placer Mines!

Silver-Plated AMALGAMATING

PARKE & LACY, General Agents, San Francisco, Cal. FRASER & CHALMERS, General Agents,
Chicago, III., and Denver, Col.

NAMES LEFFEL & CO.,

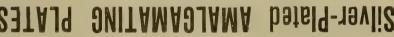
or 110 Liberty St., New York.

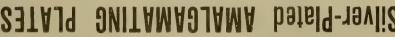


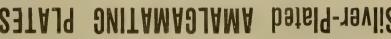


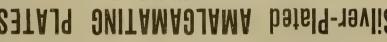














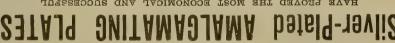










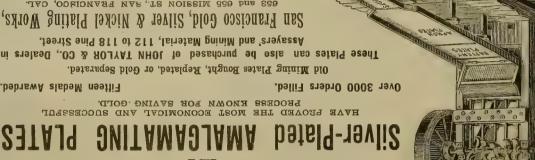












Old Mining Plates Bought, Replated, or Gold Separated. Over 3000 Orders Filled. Fifteen Medals Awarded.

San Francisco Gold, Silver & Nickel Plating Works, Assayers' and Mining Material, 112 to 118 Pine Street.

REND FOR CIRCULAR 658 and 656 MISSION ST., SAN FRANCISOO, CAL.

NOTICE,—My Silvet-Plated Plates are well known and used everywhere. They have proved superior to all others in durability

# CHEMICAL LABORATORY, THOMAS PRICE'S ASSAY OFFICE,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed

1 25 < Free American Exchange Hotel,

CHAS. & WM. MONTGOMERY, Prop'ra.

#### DIRECTORY, MINING SHYBEHOLDERS'

COMPILED SYERY THURSDAY PROM ADVERTISE

•	ST.	$\mathbb{E}N$	MS	SH	SS	A
REIDS	CD S	V O	NINI	WN	I ST	NHW

71 3q		go		15 THE	Montgom a	808	oizrtoM	I. anovir		M 25 noiten	Day Jassnar
01 10		DI		45 240	Montgom	566	Pylice Olive	T signosi		liey M Co.	
	T	25		48 ou	T OUG		H Willson.				Eureka Con
61 A		TO	***** ****	TA BE	Montgom	229		T Bin oli		M lovert M	
0I 29		09	*********	TA SE	Montgom	308	W Havens.			M sV 3 sin	
VELE		,TXUOM	OG?		OLLIOR		SECRETARY.			COMPANY,	
					_						
							DENDS-				_
ec SI		នេហជា			montgom		. Holmes.				
VI DB		lsuac			moganoly, (	308	quanta O	d AgiU		001	
6I 59			Α				"W Heath.,	Hsbaysk		M. Co	
60 17	<u>u</u>	is impure	τ <b>Α</b>	te en	d 468		Crockett			oD M var	
6I 08			Α			908	K Durbrow	WsbsveV			
6I 98		[sunt			montgom	300		Hevada.,B			M S sobnA
	_									COMPANY	
ATA(	1	EETING	M	IN S. IF.	_		SECRETARY.		30·I	AMVANOD .	TO WHAT
				.0	ाधम भ	E OT 8	EELING	M			
48 81	miolifiaD 6	ne	notgaittu	3J M B	πει,d	T SOUT''	DOLLINOT L	36 . вы	379 M	00 M	Union Con
38 Bi	daliforu			OA Ber		I YOM.		S . , Bi.	rolifaD		
	3TO Pir			5G R S		I YOU		22 sb.		W Co	
	Contgomes			O'ETB	1 Lat 1	I ast	7 59C 32	.,(e,.,sba			Sierra Meya
	Lontgome	1 6ºE:		ख्र <u>ं च ०,</u> ७		ust	50. Nov 30	62 cb.	ğy9Μ		Potosi M Co
	V szer J.,			4. H Byr			AON 10	60., sia:		O M noD ai	
48 42	V sastD	808		N L T7 H J L8			IO, Oct 19	S sin		Day God May	Mew Coso B
no fi	Montgome	0.02		N S D. F			IS TWO E	SI Birr			Morgan M
	332 Kear	1 000		Tah O. A	1.863		I VOV10		toutro		Mountain A
	Montgome	1 826		TOM L. 8			SS. MOV SS	88 siar	TOINEO	AL Co	
	Longsome		"'queaganq		g'g		Z AONT 'NI		Nev.	GO	Matheson
	Montgome		TSVile	O MIC	. 59d0	4Dec 1	VOV G.)		bI		
ry St	Montgome	1 223,,,,,		2, T Wet			I YOV., IO	4 SICT		M Co	
18 YI	Montgome	1 608,		27A K I		8Dec		Td., .nbs			Gould & Cu
	tosnas Els			L. R Con			05Oct 2	s.a.			Guadelupa
	өшозза И пијеци	T X#W****		J. M. 16	nst		0.00Dec 15	Isao	mitte)	ece G M Co	Figher M C
	Montgome		natilo	9TFH 9TFH	ast7.		1 VOV02	I gao	Sight		
	19 Uslitorn			10 J. Star			VOV	ada i		same M Co.	
	Montegome			a a o · · g			50,.Dec 5	£2 aba			Chollar M.
	d Californ			ir. 1 G H		y nec z	I VON. O).I		corn.cooc		
38 31	BROOK 6 ON	rier i		SED"Z		I DOUL. 9		ain?	toliko	OO M 38	Chicago M
	Montgome		ləx	W.T.We	3 99CI 6S	VOVI., 8	IU. Oct 2		tolife)		Champion
	Minntgome		Landresse.				1-50, Oct 2		oliko		
12 St	Montgome	I 20E	gostsW	3.,WH	ξ π.ε.τξ	ast	S vol03	35aba	79M		Alta S M C
SHNES	OE OE BUS	PLA	EORETARY.	TE S	ING'NT, SA	ED. DEL	AM'T, LEVI	TOM. MO.	TADOL	٠.	COMPANY
					'SIN	SZWE	HSSA				

1	Table of Lowest and Highest Sales in S. F. Stock Exchange.								
Continue	DNIG	ENI	DNI	ENE	DNI	ЕИЛ	ING	END	
100   100	92.1 94.1 97.1	08.1	07.1 02.			30.8	8.45 1.75 25.45	09, I	Alpha. Area Argenta. Seloher
1	2.40 30.1 08 08,60	27. 22. 2 32. 2	03.6 07.2 01.1	08.7 81.5	01. 27.2	2,25 1,05 60 1,05 8,20	2,50 2,50 1,05 2,50 2,50	00,1 65 65 86 86 86	roppay Ballon, Balcher Baltimore Baltimore Belle Isle
	06. 64.2 00.8	28. 28. 2.90	1.15	08 2	1.1 27 3.20	36. 98.2 08.8	98 98	181 3.70	John Va. & Cal.
	01.8 81.8 7.0 02,	<u>07.</u>	121 0 : 8 8	02°	8.8 07.	8.85 60	69. 10}	3.00	endence
Company   Comp	ng.	38.		68.	UL.I	00.1	06'		lsrtusC
Compared	94.9 19			OP:I	17.00	29	00 Z		Cast B, & B
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	6.25	87.8 87.8	9° 9	00.7	31,0		89	91 F 0: F	HolmesBemioE
2. 20 2. 20	69. 1.50 2.00	98.1 98.1	1 60	68.1 06.1	02.1	09.	09	01:10 120	ndependence Vubice Kentnek Kentnek
06.2 0 08 68 00.8 62 03.0 08 03.0 08 03.0 08 08 08 08 08 08 08 08 08 08 08 08 08	89	2 05	 पर 9	****		9219	97.7	62.8	MonoVI onoVI onoVI onoVI onoVI onoVI ono
7.5 08.18 1.2 0.2 1.9 1.2 1.0 1.0 1.0 1.1 1.1 1.1 1.1 1.1 1.1 1.1	09.6	00.8	48			00.8	°7'6	67.8	North Belle Isle
02.8 00.8 4.8 00.8 00.8 4.8 4.2 U.Z. 4. 2 m.smray	0).Ś	08.1	2,15	39. I	5.50	06 I	8.3	06 I	Nev. Queen
03.1 34 1 03.1 04.1 00 2 03.1 03.1 08.1	02.8 03.7	3.00	4.8	00.E	37.8	67.8	U7.2	2 40 54 1,30	vermaniso10

# Savage Seg. Beloher. Sierra Merada. Silver King. Sorpion. Syndicate. Union Con...

3 37.8 00.7 03.8 87 32.8 00.7 53 00. 02 07. 02. 04. 84 04.

\$7 \$6 03.7 82.9 82.8 \$8 \$7

00 Хепом Эзекек	4700 Hale & Mor 851 2
25 Utab detU 82	
20 Union Con 4.20	6 30 Gould & Curry
00.1 Hotdrops 05	
So Sierra Mevada 6	430 Crown Point 7010 Y
00 Silver Hill65c	I 1862
ST Savage	820 Ородок
UG Peerless Peerless 00	
90 Potosi	
90 Cverman 3.00	
\$21udO 02	
00. I	ZIO Reicher Ing. I 1961
06. Е. с. певи, с. мем 00	
00 N. Belle Is 84	850 Alpha2.05 2
So Mexican assessing 02	
O Lady Wash 70c	
UP, L 90rdeu C 00	
0, 5	F. 1 2001 0 Ca
TO SUPPLY MANUEL OF	DOTATION T. T. TOTATION
avireday H Jante o	Sales at San Francisc

## SPECIAL MEETING.

#### ing Company. South Comstock Consolidated Silver Min-

A special meeting of the Stockholders of the South Comstock Connected the Connected with School Company, Mo. 399 California, Patreek, room 4, Sar, Parno sco, Jahiltornia, on Monday, Parno sco, Jahiltornia, on Monday, Parno sco, Jahiltornia, or Jahiltornia, Jahiltor

Mining Share Market.

The stock market has been rather firm this see her extive. There are good developments in the stock market has been active. There are good developments in some varieties have been active. There are good developments in some varieties have been active. There are good developments in the stand Morerosa. It is so her eastward; that it is believed to be something the proof of the hale and Morerosa. It is so her eastward; that it is believed to be something will read it is believed to be something will read it is believed and rates; and this common at the Carson rates; and this water in the Carson rates; and this water in the Carson rates; and this water in the Carson rates; and this water will give a good and lasting milling and other Gold at the more water-mill of one extraction at the comparies according to the More and the more than the mark to the mark to the mark of the mark of the more and the mark of the mark of the mark of the mark of the more and the carson fall of the More and California and Virginia, \$2.00.12; Boil and the more and the mark of the mark of the more and the more and the mark of the mark of the more and the more and the carson fall of the More and the mark of the mark of the more and the mark of the mark of the more and the mark of the mark of the more and the mark of the mark of the mark of the more and the mark of the mark of the more and the mark of 
# Our Agentes. Our Agentes. Our Agentes. Our Agentes. Our Agentes. Our Agentes and o much in isd of our opper and the cause of practiced knowledge and science, by sestisfing the processing, by ioning their their bornes and encounseling theore. We intend to send none of the worky men. Our Molecular Alexander Clara Co. Our Molecular Alexander Clara Co. Our Molecular Agente Clara Co. Our Molecular Agente Clara Co. Our Molecular Agente Co. Our Molecul

# Complimentary Samples.

Persons receiving this paper marked are re-quested to examine its contents, terms of sub-scription, and give it their own patronage, and, as far as practicable, aid in circulating the journal, and making its value more widely known to others, and extending its influence in the ceuse it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough, If already a subscriber, please show the paper to others,

Ligt of U. S. Patents for Pacific Goast payers and a loosely inlorumed lever, Inventors for Pacific Goaste are connecting arm or bar to be moved, the operator is enabled as to be moved, the operator is enabled as to be parts by abort impulses, so as to obtain all power that is necessary to effect the object of U.S. Patents in Drway a configuration of this city has a configurate to the parts of the control of the parts 
## The Last Spike.

decided that the first excursion would leave excursions have been prepared at the general offices of the Southern Pacific. It was at first Full details for the two great "last-spike"

here on Monday, the 12th inst., as 4 o'olock r.
decided that the first here, at 4 o'olock r.
here on Monday, the 12th inst., at 4 o'olock r.
w., reaching Ashland on the afternoon of the
13th. It has been found necessary, however,
to postpone the trip, owing to the heavy rains
to postpone the trip, owing to the heavy rains
the information received from the railroad
is necessarily indefinite, and will depend on
the information received from the railroad
to rail of the time when a safe and comfortable trip may be made.

This is a special excursion, to which invited
fortable trip may be made.

This is a special excursion, to which invited
to view by daylight the grand scenery of the
to view by daylight, the grand scenery of the
to view by daylight, the grand scenery of the
and Yumcalla valley. Engenc City, at the lead
of the Willamette valley, will be reached by
inight, So far as the California and the land
of the Willamette valley, will be reached by
of the Willamette valley, will be reached by
inight, so far as the California and the land
ways by daylight, thus giving the suplest opnight, to see the scenery both through
Shasta and the Sistiyous. The price of the
Shasta and the Sistiyous. The price of the
Shasta and the Sistiyous, including eleeping-car
round trip will be \$25, including eleeping-car
tround trip will be \$25, including eleeping-car
tround trip will be shall in the supplest of the

#### Bullion Shipments.

We quote shipments since our last, and shall

Eureka Con., Dec. 2, \$23,000; North Belle Eureka Con., Dec. 2, \$23,000; North Belle Isle, 5, \$35,000; Mt. Diatolo (for November) \$42,739; Con. Standard (for November) \$42,739; Con. Standard (for November) \$42,739; Con. Standard (for November) \$6, \$16,000; Con. Caluorias and Virginia, 7, \$61,850; total to date for November, \$209,856. Savage, 5, \$16,000; Morember, \$2, \$16,307; Bertzington, 3, \$15,876; Germania, 1, \$3476; Hanauer, 1, \$3400; Pascoe, I, \$1460; Hanauer, 2, \$4700; Crescent, 2, \$1640; \$1,460; Germania, 1, \$3476; Hanauer, 2, \$2420; Germania, 2, \$1544; Hanauer, 2, \$2420; Germania, 3, \$2520; Germania, 4, \$5737. be pleased to receive further reports:

## San Francisco Metal Market.

WHOLESALE, DE

	Ø 98	Fissks, old
	00 00	T STROKE THE THE THE THE THE THE THE THE THE TH
00		Quickstrver—By the flaskt
		Sh deaf ad ad an manning
22	7 5 6	Oharcoal
99	9 60 67	FINFLATE-Cloke
91	@ 01	Waylor & Co
G	@ FF	Machinery
g	90, ¥¥	Plow
-	Ø16	Black Diamond, ordinary sizes
97	Ø 0T	PARENT-FURNER ID.
20	20 (2	Ohilled, do
	Ø 00	Buck, #8 bag
_	<b>20</b> 08	Shot, discount 10% on 500 hag. Drop, #9 bag. 1
	(6) b	Sand #, con 500 bag Drop, # bag. I
94		Ĝ T.88
-	@ 00	pid_d.a.
	Ø 00	TOTAL
~	Ø) 0c	Oldy Light with the little of the second of
nn	00 (953	Eginton, fon. American Soft, No, I, tou. American Soft, No, I, tou. Oregon Pig, bon.
00	920 -	THE TOTAL TO
90	870 -	tot I old the mountain
		Etota corone
00	— (£30	[ROM — Glengarnock ton
21,	@) 6T	Sheathing Ingot. Fire Box Sheets
133	13 @	Ingot
1000	8 6T	Sheathing
IZ	13 (w	Bolt Jiod
		COPPER—
(9	P. (Q	Armagosa
1.	m 10	BORAX-San Bernardino
-	20 10	ANTIMONY-French Star
	OUT 'O	out andertour and drough were the

#### New York Metal Market.

Telegraphic advices dated Dec. 8th give the following:

W fork prices:

BAR SHIVES—9545 per ox.

BORAX—54,604c.

COPPER—1646 00 (0,00.6).

BORAN—164,01,522 (0,0.6).

BORAN—164,01,522 (0,0.6).

OUTCESLIVES—289.

QUICESLIVES—289.

QUICESLIVES—289.

York Metal Exchange Market Report".

The following is the latest by the Model Report".

COPPER—Firm, spot closing at \$314,000E10.

Thush Schong at \$5.1205.30 spot.

Transferable Notices of Lake) issued at \$16,700E.

Lake Schong at \$5.1205.30 spot.

Transferable Notices at \$1.200.

The Metal Action of the Metal Report of the Metal

From the official report of U.S. Patents in DEWRY 6. O. s. Patents Office Library, 250 Market St., S. F.

POR WEEK ENDING NOVEMBER 29, 1887, 373, 398.—Tusecticide—W. A. Gatner, Fresno, Cal.

A 77, 060. - SPRING ROLLER - E. Gres, Tombelone,

MOTE,—Copies of U. S. and Foreign patents furnished by Dawey E, Co., in the stortest frame possible (by mail por telegraphic order). American and Toreign patents to Telegraphic order). American and Toreign patents members to Facilio Coast inventors transacted with portion security, at reasonable trates, and in the shortest possible time.

#### Notices of Recent Patents.

worthy of special mention: Dewey & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are Among the patents recently obtained through

Worthy of special mention:

\*\*REVIT-DRIER, — Ambrose Blatchly, S. T. Wo. 379,808. Dated Nov. 29, 1887. This improvement in fruit-driers consists of horizontal provement in fruit-driers consists of horizontal parallel chambers arranged to receive fruit-trays, a heater and blowing or draft mechanism compartments, a means for reversing the current so that it may be caused to flow through the current so that it may be caused to dow from the and back through the other, with regulating and back through the other, with regulating distributed as it passes from one chamber to the other. The apparatus is more specially designed for the apparatus is more specially designed for the designed for the designation of fruit, it with the other.

Woodland, Yolo Co. No. 373,906. Dated Nov. VINEYARD CULTIVATOR. — Нотасе В. Reed,

Woodland, Yolo Clo. Wo. 373,906. Dated Now. Woodland, Yolo Clo. Wo. 373,906. Dated Now. 29, 29, 1837. This collivator is specially applicable to that class which are used for cultivating in the stone of the class which are used for cultivated are in regular rows. It consists of ing an agic made in it as a point near the cultivated are in regular rows. It consists of ing an agic made in it as a point near the ling an agic made in it as a point near the ling an agic made in it as a point near the last special papers. The second of the plow-beam, and hear the last special papers of the last special papers of the last special papers. The special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special papers of the last special papers of large special p

the of the composition is present under the just a variet which the part is closed down, and the inclaion sealed up with grafting-wax.

— DEVICE TOR LITTING GOODS FROM SHELVES.

Co. No. 373,939. Dated Nov. 29, 1887. The object of this device is to lift goods or packages upon which kieds is to lift goods or packages upon which kieds is a ladder in order to reach them. The invention consists in a handled stick, he invention consists in a thought together automatically by the action of the best of the goods to bind each to goods to be lifted, and to be invention and is died clamps or arms which a here in prought together automatically by the act brought together automatically by the act prought together automatically by the properties of the further or prought to goods to pince and a victor and a first of goods or olamps are rendered adjust the goods to bind consists in the means by which also in the form of the f

of construction and strattgement.

LEVER ATTACHMENT FOR RAKES.—D. F., Parter and sellers 'vows. All prompt delivery' and sellers' vows. All prompt delivery' and sellers' vows. All prompt delivery and device previously patented by the same inventor. 29, 1867. This is an improvement on a similar device previously patented by the same inventor. The present inventor consistes of a novel fever and bolding measurement on a similar device previously patented by the same inventor. The present inventor control fever and bolding measurement on the inventor of th



## ELECTRIC DEVELOPMENT COMPANY.

# Incandescent & Arc Electric Lights.

Electric Motore, Dynamos, Tramears, Elevators, Signals and all kinds of Electrical Systems for lighting and samission of power, either threet or with storage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

# P. GREGORY & CO.

San Francisco, Cal.

Cor, Fremont and Mission Sts.,

YABNIHOAM

SOUTAL EUGINES, PAYNES VERTICAL AND HORI-VAD BOILEKS. VAD BOILEKS. ENGINES' BROS. HOISTING

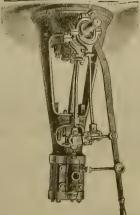
10DSON ENGINE CONERNORS. PICKERING ENGINE GOVERNORS OLLO SIFENT GAS ENGINES,

NATHAN AND DREYFUS OILERS.

DISCLON'S CIRCULAR SAWS. KORTING INJECTORS AND EJEC-

H. W. JOHNS' ASEESTOS PACK. TVNE VND BODIEK SVM WILLS. ING CO'S KUBBER GOODS.

NEW YORK BELTING AND PACK.



FROM 2 TO 100 H. P., ALWAYS IN STOCK

**ENCINES** Sug BOILERS

YACHT ENGINES.

BEMEUT & SON'S MACHINISTS NEW HAVEN MANUF'G CO.'S MA-FRANK & CO.'S WOODWORKING N. A. PAY & CO.'S WOODWORKING

SICKLOUD, S SOMER DEILLS.

WEBBER CENTRIFUGAL PUMPS. PUMPS, INPROVED STEAM

STURTEVANT BLOWERS AND EXHAUSTS. SERIN BYND SYM BLADES.

MASSEY'S STEAM HANNERS. BOLLOWAY FIRE EXTINGUISH. ERS. BRADLEY CUSHIONED HAMMERS TURBINE WATER WHEELS, BEVINVED MITTING MYCHINES SHIMER MATCHER HEADS.

MILL SUPPLIES AND LUBRICATING OILS

20 Fourth St., Pioneer Building, JOHN T. SULLIVAN,

Boot and Shoe Maker.

Maker of the famous Miners' Shoe.

Cloods sent by mail or express,

California Inventors, to describe the state of the personal solutions, to obtain Phenese and the personal solution expedience as

MINCHEZLEB HONZE

44 Third Street, San Francisco, Cal.

This Fire-proof Brick Building is centrally located, in
the healthiest part of the city, only a half block from
the Orand and Pelace Hotels, and close to all Steamhoat
and Indirect Offices.

Terms, Board and Room, \$1.00 per Day

And upward.
ROOMS WITH OR WITHOUT BOARD.
FREE COACH TO THE HOUSE.
J. POOLEY.



U. S. Mavy, Pacific Coset S. S. Co., Market St. Cable Railway,

Laboratory NEW YORK. No. 25 Bond St. H. M. RAYNOR,

Manufacturing Purposes.

otherd. Typewriting, Permanding Bookeesing & Collecte, Send for Except St. B. B. S. Send for Except.

# LIFE-SAVING RESPIRATOR

Entirely Prevents Lead Poisoning

and Salivation.

The most perfect appliance for people engaged in Smelting. Dry Crushing, Gurano Works, Orneibing, Curano Works, Orickeliver Mines, Lead Corroding; Threshing and Stock-triving and all other competitions where there is a facek-triving and all other competitions and administration of the people of the people of the people of the facek friet, they are inflapensable, as no foreign substances on the inflapensable, as no foreign substances on the inflapensable, as no foreign substances. The Respirators are sold subject to approve lates, Price, 2500 each or \$50.00 per dozen. Seat post-paid to say address communications and orders to address communications and orders to address communications and orders to JOHM TAXIOR, & OC., Solde Agents,

JOHN TAYLOR & CO., Sole Agents, 114 to 118 Fine St., San Francis



## No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

bleulars in Parquiblet No 25. 88, MACMETIC FLASTIC 82, San Francisco, Cal; 304

LIFE RENEWER,

BAN FRANCISCO.

DOMNIE B' I' L' GO'

Standard Oil Company, Cal. Sugar Refinery, Etc.

PREVENTIVE AND REMOVER BOILER SCALE

DOWNIE EUCALYPTUS

Stockholders of the SUTRO TUNNEL COM

SUTRO TUNNEL COMPANY

UNION GOPPER MINE, Calaveras Co. UMOVION GOPPER MINE, Amedor Correspondent as Agost for Smaller in London, Liver Pool, New York, Boston and Baltimore.

420 Montgomery St., S. F. Ores, Mining, and Commission, HORACE D. RANLETT,

PELHAM W. AMES, Secretary.

"TE THAHAM POS

## **NILHO-CI-XCEHINE**

("DYNAMITE" or "GIANT")

TOR REMOVING STUMPS.

HAS NO EQUAL Vigorit "LOW" Powder, Blasting Powders.

WORKS: California City, Marin Co., Cal.

ED. G. LUKENS, Manager.



# Iron and Machine Works.

CALIFORNIA MACHINE WORKS,

WM H, BIRCH & CO., TRANSTER, AND MACHINISTS, — San Francisco —— BULDER OF —— BULDER

Brodie Rock Crushers, Steam Power, Hydraulic, Side Walk and Hand-Power Steam Engines, Flour Mill and Mining, Saw Mill and Mining, Saw Mill and

ELEVATORS

## Golden State & Miners Iron Works,

Marufacture Iron Oastings and Machinery of all Kinds at Greatly Reduced Rates.

STEVENSON'S PATENT

Mold-Board AMALGAMATORS,

Golden State Pressure Blowers.

First St., between Howard & Folsom, Sta

UNION IRON WORKS,

SAORAMENTO, CAL.

ROOT, NEILSON & CO.,

Engines, Boilers, Steam

MACHINERY FOR MINING PURPOSES.

Flouring Mills, Saw Mills and Quartz Mills Machinery constructed, fitted up and repaired. Front St., bot. A & O Sts., Sacramento, Cal.

THOMPSON BROTHERS,

EUREKA FOUNDRY,

могутиваем унительно от статов от вранитом приментиры. 23 and 131 Beale St., between Mission and Howard, S.F.

J. R. ORTON,
J. R. ORTON,
J. R. OPT CONT.

MANUP'RE OF GENERAL MACHINERY,
Special attention given to Woodworking Machinery,
Special attention given to Woodworking Machinery,
Steam and Gas Engines. Correspondence solioited.

MINING FNGINEERS

Civil and Mining Brgineer, W. A. GOODYEAR,

Address " Business Box A," office of this paper, San MINING EXPERT AND GEOLOGIST.

ROSS E BROWNE,

Mining and Hydraulic Engineer,

No. 307 Saxsome St., San Francisco.

W. SPAULDING

Manufacturers of SAW COMPANY

hserted Tooth SPAULDING'S

CHISEL BIT

SAMS CIRCULAR

orne. If and 19 Fremont St., San Francisco. SAW MILLS AND MACHINERY

Mechanical Photographers, RUNNELS & STATELER,

1881 82 AON

WICHHIS W

957 Market St., San Francisco.

A SPECIALTY. Machinery, Models and Buildings

San Francisco Cordage Factory.

Extra sizes and lengths made to order on short in
TUBES & CO. Constantly on hand a full assortment of Manila Rope, as Rope, Tarred Manila Rope, Hay Rope, Whals ne, etc. Established 1856.

611 and 613 Front St., San Francisco.

, HEHM 35 T JOTO First Premium Awarded at Mechanics' Fair, 1884.

Ban Francisco, Cal.

SHIPPING AND COMMISSION MERCHANTS,

309 and 311 Sansome Street, San Francisco, Cal.
Agents for Growers and Manufacturers. Chartecres of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products.
General insurance Agents.

General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of Lendad ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass Have correspondents in all the chief cities of the United States, Europe, Australia, India, Obina and the princi-islands of the Pacific. Purchase goods and sell California products in those countries.

ROLLING MILL PACIFIC

UP TO 20,000 LBS, WEIGHT,

True to pattern and superior in strength, toughness and durability to Cast or Wrought

Inon in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE

LOCOMOTIVE AND MARINE FORGINGS.

HIGHEST PRICE PAID FOR SCRAP IROU AND STEEL. ALSO Steel Rods, from \$ to 3 inch diameter and Flats from I to 8 inch. Angles, Tees, Channels and other shape, tell Wagon, Burgey, and Teef Tries, Pounds per yard. ALSO, Relivond and Merchanen from, Molled TEEL Angle, Channel, and I to 45 pounds per yard. ALSO, Relivond and Merchanen from, Molled Sms, Angle, Channel, and I to the pounds per yard. ALSO, Relivond and Merchanen from, Molled Plates; Cannel Flats, Crankey, Pistons, Connecting Rods, etc. Car and Locomottive Aides and Krames, plates; Steamboat Shaffs, Crankey, Pistons, Connecting Rods, etc. Car and Locomottive Aides and Krames, and Irames, and Merchanels, Crankey, Pistons, Connecting Rods, etc. Car and Locomottive Aides and Krames, and Irames, and Merchanels, Crankey, Pistons, Connecting Rods, etc. Car and Locomottive Aides and Krames, and Irames, Carlos and Krames, and Irames, Carlos and Merchanels, Carlos and Krames, Carlos and Carl

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

IBON - NO1.

HINCKLEY, SPIERS & HAYES, Proprietors.

CITICE, 220 Fremont St.,

-- ЧО ВЯЗИПТОКАПИКИЕ-San Francisco

MARINE ENGINES AND BOILERS. repeller Engines, either High Pressure or Compoun

MINING MACHINERY.—Hoisting Engines and Propeller Engines, ettner n Stern or Side-wheel Engines,

Works, Cages, Ore Buckets, Ore Cars, Pumping Brgines and Pumps, Water Buckets, Pump Columns, Air Com-pressors, Air Receivers, Air Pipes,

Crushing, Amalgamating Pana, Sotti rs, Furnaces, Ke-torts, Concentrators, Ore F-eders, Rock Breakers, Fur-naces for Reducing Ores, Waler Jackets, etc. MILL MACHINERY. - Batteries for Dry or Wet

MISCELLANEOUS MACHINERY. Flour

Mill Machinery, Saw Mill Engines and Boilers, Diachinery, Powder Mill Machinery, Water Wheels

WORKS ORE WET OR DRY. Tustin's Pulverizer

**BINES** TUSTIN'S PULYERIZER.

OF ALL KINDS,

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries Either for use on Steamboats or for use on Land.

OF EVERITY DESCRIPTION.

Boller Repairs Promptly attended to and at very moderate rates.

Desne Steam Pump. AGENTS FOR THE PACIFIC COAST FOR THE

SPECIALTIES:

Corlies Engines and Tustin Ore Pulverizors.

DEAUE STEAM FUMP.

Agents and Menuiscturers of the Liewellyn Feed Water Purifier and Heater.

 $\mathsf{MACHINERY}$ 

SLEVN ENGINES'

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc.

SAVAGE, SON & CO., 135 to 143 Fremont St., GENERAL MACHINE WORK.

PERFECT PULLEYS

Medart Patent Wrought Rim Pulley

States of California, Oregon and Meyada, Montana, Wyoming, Utah and Arixona, Best Balanced Pul. 2y in the World

SHAFTING, HANGERS AND APPURTENANCES (## Street in the first 
THE RUSSELL PROCESS COMP'Y.

Room 709. NEM LOEK OFFICE, 18 BROADWAY C. A. STETEFELDT, President.

This paper is printed with Ink Manufac.

For the Shares of the Shares of the Shares of South 10th St., Philadelphie. Branch Offices of St., Now York, and 40 Las Salle

St., Ohlosgo. Agent for the Pacific Coast—

Joseph H. Dorety, 529 Commercial St., S. F.

Wos. 129 & 131 Fremont Street, Justine Street,



**WACHINE MORKS** 

escor to THOMSON & EVAUS), 110 & 112 Reale Street, S. E.

EVANS.

San Francisco, Cal.



Office, 40 Meyada Block,

Dynamos and Motors of all sizes for Conveying Power on Waterfalls for use in Mines and Mills, erected under arrange of performance.

Electric Railways, and Apparatus for the Electric Transmission of Power.

Storage Batteries.

MOTORS, LAMPS

Keith's Electric Dynamos

Inventor and Manufacturer of

N.S. KEITH

21 & 223 First St., San Francisco, Cal. John W. Quick, Proprietor-

San Francisco Pioneer Screen Works, Orders promptly attended to.

or Flour and Rice Mills, Grain Separators, Revolving and Shoteens, Stamp Estetries and all holds of Minadidates and all holds of Minage and Milling Machinery. Jron, Shoes all uses incade other metals purched of the celebrated Slot Cut; burred and Slot Punched Sorcers, burred and Slot Punched Sorcers, burred and slot Punched Sorcers, burred and slot Punched Sorcers. Mining Sorcers as specialty, from Mo. I to 15 (fine).

PERFORATED SHEET METAL

Best and Cheapest in America.

BATTERY SCREEUS

GREAT REDUCTION!

SAN FRANCISCO, OAL.

8 California St., and 21 Fremont St

PARKE & LACY

REPRESENTED BY

INGEBSOFF BOCK DRIFF CO.

THIRD EDITION NOW READY.

Section 16x16 feet; Length 36 miles.

NEM LOBK VAD EUL DESCRIPTION OF THE

WITH MAPS, ILLUSTRATIONS.

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in

ENGINEERS, CONTRACTORS,

MINING WEN

NOTICE TO

H

Factory, 11 Stevenson St.

SAN FRANCISCO, CAL,

BALT LAKE CITY, UTAH,



PORTLAND, OREGON.

Mining

WINING

ENGINES and BOILERS. Machinery Machinery, Steam Pumps, Wood and Iron

# 301LER. NOTJEZA

NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

MACHINERY,

BRAYTON & CU.,

HEINE SAFETY

L. R. MEAD, Secretary.

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

PACIFIC IRON WORKS

Has the Following Advantages:

SVEELK'

DURABILITY,

San Francisco, Cal.

AND FACILITY OF INSPECTION and REPAIRS.

. өзи пі wоп төwоЧ өзтоН 000,00

Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Works Hueter Bros. & Co., California Jute Mills, and other places.

Guaranteed More Efficient than any other Boiler made.

REFRIGERATING MACHINERY for Steamships, Browerles, and Cellars,
WILSON'S PATENT GAS-PRODUCER.
STEAM BOILERS of all descriptions.
Funns, Steam Capsterns, Carcy Withils, Vacuum Pans, Clariflers, Double Effects, etc.
Punns, Steam Capsterns, Carcy Witholes, etc.
Punns, Steam Capsterns, Carcy Witholes, etc.
Propagation of Library Capsterns, Carcy Witholes, Concupration of Capsterns, Carcy Witholes, etc.
We builders of Library Capsterns, Carcy Withole Mill for Quartz Mountain Milling Company.

Seam Configuration of Capsterns, Carcy Without Company; 60-stamp Mill for Quartz Mountain Machine Capsterns, Carcy William Capsterns, C

AND RAILROAD CASTINGS.

MOTICE..All our places are guaranteed to have the full weight of silver agreed upon, and are tested becomplaints done leaving our works, thereby avoiding the complainted about light weight, made so often before we started in this branch of industry.

521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material.

BATTERY SCREEUS AND WIKE CLOTH

HYDRO-CARBON ASSAY FURNACES. Agent for HOSKINS'

W. T. WENZELL,

IRON CASTINGS of all descriptions. Analytical & Consulting Chemist.

Opp site Second St., San Francisco, Cal Opp site Second St., San Francisco, Cal Gareini analysis qualitative and quantitative, made of ores, necess, soils, vasters, foods, medicines, industrial products, poisons, etc., Correspondence solicited.



BOILER,

**MATER TUBE** 

Manufacturers and Sole Agents for the Pacific Coast for

QUARTZ MILLS—Gold and Silver, Copper and Load Smelting Works, Roasting Furnaces of all kinds.

AIR COMPRESSORS—Rose Power Transmission.

HYDRAULLO FURITHER Cand Hoisting Machinery.

WROUGHT-IRON WATER PIPE a Specialty. Morr.—Have Just completed order for 35 miles of 44-inch pipe of 4-inch into its Spring Valley Machinery. San Francisco.

SAW-MILL MACHINERY of all kinds.

SAW-MILL MACHINERY of all kinds.

SAY-MILL MACHINERY OF A linkinds.

SAY-MILL MACHINERY OF A linkinds

MACBETH PATENT STEEL-RIM FULLEVS—Fitty per cent lighter and 25 per cent cheaper than cast iron pullevs; will not break in transportation.

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED. MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES. LOL GOLD MINERSI

SAN FRANCISCO NOVELTY AND PLATING WORKS GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FURNISHED ON APPLICATION.

No. 108 FIRST STREET.

HAD CHIPPED MHEETS

MEDAL, AWARDED, MECHANICS' FAIR.

STEIGER & KERR,

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

S Triumph Concentrators. I Mew 12-inch, 35 H. P. Engine. 1 Mew 18-inch, Apply FOR SALE.

VERY CHEAP. Apply, Apply, Apply, Apply, Banders, Yorm 13.

BAOR THES OF THE AND SORWING EL, TOOM 13.

BAOR THES OF THE MINING AND SORWING PRESS (University of the Apply of th

(\$275.00) F. O. B. FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

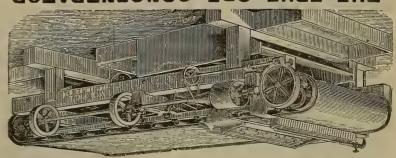
OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The wear and are reciprominal. A machine can be seen in working order and ready to make tests at 230 Fremont

THE MONTANA COMPANY (Limited), LONDON, October 8, 1885.

THE MOUTANA COMPANY (Limited). DERE SIRE:—Having tested three of your Frue Vanners in a competitive trisl with other similar machini mmph, we have satisfied ourselves of the superiority of your Vanners, as is evidenced by the fact of our havin wed twenty more of your machines for immediate delivery. Yours truly,

Profected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; February 20, 1883; September 18, 1883. Patents applied for. M. E.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 from Prues and more stamps have been purchased.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,



OF VANNING MACHINE. **JURY 3HT** 

## AIR and WATER POWER MACHINERY. COMPRESSED

RIX & FIRTH, 225 and 227 First St., San Francisco.



SAN FRANCISCO, CAL.

NATIONAL ROCK DRILL.

WINEBS, HOBSE MHIW

All wrought iron. No gears, nobreakage.

All wrought iron. No gears, nobreakage.
One horse will easily handle roke or where to a depth 256 feet, giving entire actisfaction to the prospector.

Price, complete, \$200. 150 soil on this Coast.

Drill.



KNICHT'S WATER

MILLS, PUMPING AND HOISTING.



SINGLE OR DUPLEX, STEAM OR BELT POWER. NATIONAL AIR COMPRESSORS.

JOSHUA HENDY MACHINE WORKS.

San Francisco, Cal. Nos. 39 to 51 Fremont Street,

Room 7, No. 109 California Street,

OF EVERY VARIETY. NEW and Dealers in SECOND-HAND BOILERS, ENGINES and MACHINERY

Stationary, Portable, and Hoisting

**ENCINE**2 **Sud BOILERS**:

Shafting,

Pulleys,

Hangers. 'səxog

SHINGLE MILLS, Etc.

MACHINERY,



WINING DOWES CENTRIFUGAL PUMPS, Steam Pumps of all Makes,

BLOWERS AND EXHAUST FANS.

LEATHER and RUBBER

guq LUBRICATING COMPOUNDS BEPLING

OF THE BEST MAKES.

PIPE and PIPE FITTINGS.

Brass Goods

FITTINGS.

Ore Feeders. Concentrators, Automatic draulic Giants, "Triumph" Ore chinery, Hydraulic Gravel Elevators, Hy-Hydraulic Mining, Quartz, and Saw-Mill Ma-

Pright Engines and Boilers Connected.

"Cummer" Engines, from Oleveland, Ohio,
Porter Manufacturing Co.'s Engines and Bollers.
"Baker" Rotery Presaure Blowers.
"Baker" "Wilbraham" Rotery Piston Pumps

BAND SAWS, STICKERS,

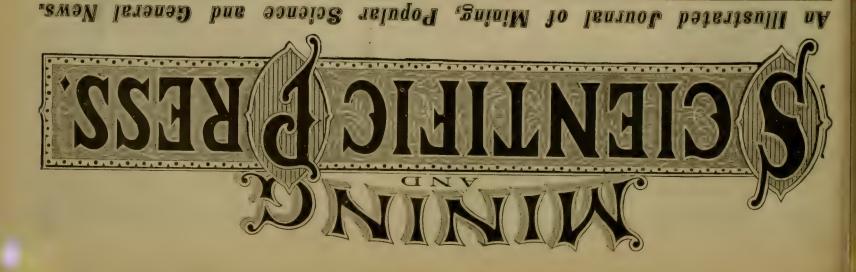
MOODMOEKING

Poegs & Clarke" Centrifugal Pumps. The Volker & Felthousen M'f'g Co.'s Bunds. Buffalo Duplez Steam Pumps. P. Bialadell & Co.'s Machinists' Tools.

AGENTS FOR THE SALE OF

Single and Double Circular Saw-Mills.

PLANERS, SHAPERS,



SAN FRANCISCO, SATURDAY, DECEMBER 17, 1887.

aggregated \$2,800,000, and the mine is now "Gore" shaft. It is 191 feet deep from sur-paying \$200,000 a month. We give on this claim, they have sunk a small shaft called the From March, about 50 feet west of the Granite Mountain Ex. the surface of 488 feet. In the eastern end of the Midland claim, and mort depth fator a gaising, seet 160 fto some

Total.....14,901.5 From B Stope... C Stope... T E Stope... T E Stope... ou meteratifie bills

Freight rebates and discount

City 4 por cent ponds

Dig one , sen rongs

Heeris and one count of smalls

Osco The ore taken to the mills during the year Proceeds 365 tons smolting came from the following stopes:

| 100 | 201, | 100 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201 | 201

of the shaft the vein looks very well, being The average costs for mining operations during the veid assaying from 150 to 175 ing the past year are higher than they were

without the expense of hoising, but this year without the expense of hoising, but this year the ore and a large portion of the waste]were the ore and a large portion of the waste]were the ore and a large portion of the Ruby shalf, and the Southern Burnance.—It was not long ago extra expense of steam, engineers, friemen, engine during 1886, owing chiefly to the fact that during 1886 all the products from the mine found their way to the surface through the tunnels

Dalance cash in Sk. Louis as reported to annual meet-ing of stockholders, Aug. 18, 1886, viz.; K. Ushe, saving's Association 20,000 00 At Boatmen's Saving Bank... 20,000 00 98 618,7018 8 600,02 the year is as follows:

the year. The average cost of crushing for the year is \$13 per ton. There are \$17 men employed in the mine. The treasurer's report for

ifornia to the French exhibition of 1889. S. Hallidie of this city as Commissioner of Cal-THE Governor has issued a commission to A.

The Dramlammon mine, Montans, yielded and had orushed 6352 tone of ore last month which produced \$110,000. The working expenses were \$49,000 and profit \$61,000.

they are not arriving fast enough to keep up with the work of building branch lines. great trouble with regard to the rails at that A good many or and work of pounds of pounds of pounds, The latter are to be used on heavy grades. The former will be laid on the main line of the system as they arrive, the present iron rails being taken up and used for the iron rails being taken tor aide tracks. The one of the stack of the stacks are the present iron rails of the stack of the stacks are the constant of the stacks. The one A good many of the new ratis weigh 62 pounds der, however, will be filled by the Eastern milla, der had to be given to foreign mills on account of the scant American supply. The recent orhave already arrived. Most of the former or

Containing 2,012,909 ounces properly and process of the connection 98 618'431\$

Extra lef-classed ove shipped to smelters.

Erist-class ove treated in the mill.

Second-class ove treated up. qu benote ore treated. :010 10

Daring the year there ewe broken and Daring annums gaiwollot edt sostras edt of besier their location.

naming them alphabetically and with reference to the various tunnels, the stope above Mo. 2 being being called stope ". A," showe Mo. 2 being shows eatled stope". B," etc. The engraving shows vided the mine into a series of horizontal planes,

formed stow and vent winds stond product. The tenden are douled of ore as seen at No. 6 displays many interesting phases. There are obutes of sold seed ore, easily extracted and treated. The width of this variety is from four to eight feet. Alternating with these are chutes of ore, showing hard compact quartz, arsenical iron, iron pyrites, and fahlers, and mixed with these are essen ruby and artice silver. The ordinary are seen ruby and native silver. The ordinary width of this variety is from two to five feet. For the purpose of keeping accurate records in the ore-breaking department, they have ditunnel show the vein wide and prolific. The cylinders. also added to the pumping plant a Knowles im-fored compound duplex pump, 10x8-inch to cover these were also, erected. There was also erected one Ingersoll straight-line air-compressor 24x30. Shafthouse and buildings four steel tubular boilers 16x60.

vancing the No. 5 tunnel were: 1st, driving through the ore body which they call the main

these points are more advantageously located from No. 5 to No. 6 tunnels. A large pum for the development of the vein than the upper reception of a Knowles compound pump.

from Mo. 5 to Mo. 6 tunnels. A large pump channel, and a series of winzes have been sunk

driven north and south of No. 5 tunnel for the ore or ont loss size band and a defining the boundaries to force force for the court of 
In addition to the above, crossouts have been

capable of developing the mine to a depth of 2500 feet. It consists of a double cylinder, double reel, Corliss engine 20x60, provided with

ously productive for its whole length of 2372 feet. Explorations below the bottom of the which are likely to widen out.

In No. 6 tunnel the vein has been continuren section; 3d, encountering another ore body consisting of manganese, black quartz and streaks of exidized ore, the whole varying in width from 1 to 2½ feet. It is not equal in bulk to the main ore body, but it carries bands and streaks of ore sessying from 10 to 55 ounces, which are likely to widen out. ore body; 2d, driving through 510 feet of bar.

report that the chief exploratory work for the year has been the advancement of Ruby shaft;

W. Plummer, the superintendent, states in his engraved from the large drawing accompanying the annual report recently issued. Mr. John

bad evad ew doidw enim edt lo noites a egeq

dend-paying mines of Montens. From March, 1885, to July of this year the dividends have

The Granite Mountain is one of the big divi-

The Granite Mountain Mine.

BA DEMEA & CO.

let, has been continued below No. 6 for a dis-

Occasionally chutes of ore are seen with the two kinds of ore lying side by side. The Ruby shaft, which is the principal out-

width of this variety is from two to five feet.

VERTIOAL SECTION OF GRANITE MOUNTAIN MINE, MONTANA.

FIRST-CLASS ORE

SECOND-CRASS OBE

CIENTEDIVED PROTE S

366 dry tons. There are two mills, one of 30 and one of 40 stamps, the latter erected during Треге was winzes, tunneling, etc., including superintendeence, labor and supplies of all kinds (and pro-During the year there was erected a large he difference in the prospecting and ore-breakand powerful hoisting plant, fully equipped and ing departments.

The average cost for breaking ore, sinking for use in building the branch lines in this capable of developing the mine to a depth of The average cost for breaking ore, sinking superintend.

SERIO. (It the first contract about 20,000 tons a double cylinder, winzes, tunneling, etc., including superintend.)

UNMINERALIZED VEIN

\$6'81**6'**28**4 04** 

69 \$95'681'8 23 995

Number 25.

11 #84'19

20°000- 00

504'818 43

## A Prospector in South America.

Andreas, the country beyond the Andreas, the highest people was the obline about a year ago. Andreas, He landed in Calino about a year ago. He went from there to Mollendo Arquing by the Littlewey four was the country beyond the Perus of waster in the work from there to Mollendo Arquing and the Mollendo Arquing of water in the work in the work in the work of water of water in the work of water in the water in the water in the work of water in the work of water in the water in the work in the water in the work in the water in the work make a prospecting tour of the country. His objective point was the country beyond the wealth of Peru and Bolivia, and concluded to gainim edt 10 sivoqer vasm teerg s breed bad Francisco, from a two-years' tour of South America, The doctor is an old Californian and a miner of considerable experience. He A reporter of the Alta has interviewed Dr. J. M. Taylor, who has just returned to San

LARGE HARMES.—The Vicksburg Herald says: "The statement that the Illings of the Statement that the Illings of Chicago has the largest table ever made from a single plank is a decided mistake. In the St. a single plank is a decided mistake. In the St. parte, is a round table parte, six miles east of Parts, is a round table of solid oak in one piece, 6 inches thick and There is a yellow cotton-wood near Chocks and There is a yellow cotton-wood near Chocks that that measures 33 feet in circumference, 9 that measures 33 feet in circumference, 9 feet monthly the ground, is 11 feet in diameter, and one on Holland's bayon, three miles east of Anone of the strong.

One of 10 noticello M.N.A.M. of 100000 of 10,000 of 100000 in the training the progress of prehistoric blacks of predicts of the progress of the season of a factorial and the factorial and 
the floor of the tivo, and without stopping, darted rapidly through the only gallery to which that out gave entrance. The curyon, which that out gave entrance. The curyon, there that the labor of the guide-terminated. A horrible oath broke from his lips. The unsuperior of the guide-terminated. Providence. Jaded and exhausted by faigure, he dropped La Gunyon, and with the tea unday parenated to the canyon, and with the tea in his advanced to the entrance of the gallery with the tury of the jaguar, which seeks to desire and, inte a self upon the two with the meath of the wild beast, poniard in hand, precipitated herrich from the resting tike a self upon the two wild beast, boniard in hand, precipitated herrich from the two continuous and, interest one wild beast, poniard in hand, precipitated herrich from the the curyon. Taking as the two from the work of the gallery the two continuous and the safe that time the two charters of the carrier in the curyon. Taking advantage, and, interest the curyon of the duryon, we spon of La Gunpa, we provided the weapon of La Gunpa, in the Dark.

The Combat in the Dark.

At the Character in the Dark.

At the Combat in the Dark.

At the Grandet in the Dark.

At the compat in the Character is the dark.

Act of the five, and, ach, atriving in the dark.

Brinded one of her protects of each of one with his again and added one of her protects of each of the stimple to close with his attempts to close with his artagoniat. Meanwhile the vayateor and stander of coyote were struggling arm to arm his dagger, and amid for the intent upon overpowering the other. They were british as a stanger of coyote were struggling arm intent upon overpowering the other. They were british and struggling the other. They were british of the control of t

She Drove her Poniard

To the hill in the cerebellum of her enemy, who dropped inert upon the ground. Ill coulde rose meny, who and stood contemplating La August. Bee, with her hair in discorder, her camies forn, her breast heaving and stained with blood, her mouth partly open and panting, her cheeks affame, shuddering in a convulsive mener, her nostrills dilated, and her eyes Hashing with a few minutes afterward she was sobbing with A few minutes afterward she was sobbing with the following day they changed the name La Caupa, and theresties as ealed the name La A year later she beems the wife of the administrator (manager). From her own lips I had an uncolored account of the sesanit, the deristrator (manager). From her own lips I had seen, and the combast in the dart, and ever since seen, and the combast in the dart, and ever since I have believed that in some women the dove conceals the fearless spirit of the eagilt.

( To be ( onlinued.)

THE USE AND COST OR MAHOGANY,—The Authority on the commodity of wood, informs authority on the commodity of wood, informs authority on the commodity of wood, informs hogany for inside finish can now indulge them begany for inside finish can now indulge them without paying much more money than they mare because the property of the managed of the paying much more noney than they man in a doctor of the higher priced native finish of the man in an advantage of their they form of the man doctor of

glided down like an enormous spider that he form of a Whistle beam Washington.—Precisely seized in its claws a pretty butterfly in the form of a woman.

In the meantime his purruers were ad- York, sends forth a piercing blast. It is blown vancing. The rayador touched with his feet by electric time from Washington.

The Mines and Miners.

BY PEDRO CASTERA.

(Continued from our lust.)

Translated for the Passs from El Minero Mexicano by I. M. M. M.

The Becaleras Were of Miches I refer, (Votebed timbers), and by these the raydodow was bearing away Lu Guopa. How he could descend by such steps, and carry a woman whose hereif, is inexplies, and carry a woman whose whose in the raydodow was struggling to extricate hereif, is inexplies. Dad returned, and miding neither the raydodow had everanged and miding neither the raydodow nor Lu Guopa, and utbeining terrible and rearspired, and utbeining terrible would have been detained and the raydodow would have been detained and the raydodow would have been detained and the foreign which he had lighted and his precious burden. The two streeters been detained and the precious burden. The two had lighted and his precious burden. The two harms ing down rather the dangerous escaleras. Upon hearing their orner the dangerous escaleras. Upon hearing ing down rather the angelenges, I will the midst of the use safes. The two my pairout hand descending in the most perions and some evn more foreible which ing down rather surface one of the psecure the rands one of the psecure and some evn more foreible which and their one pairout heart had a denoe upon his soul," snarled et coyote, as and tonger, growled et pair. It should be remembered that the gelitries of a mine are and the continued their swift descent. It should be remembered that the gelitries of a mine are nore, by pits or holes from four to aix varsandrone of the mids with the weight of those who cross it. Simetimes these outs or pits are 10 or 12 varsa wide and heart and some evn in each one who beam more, than a bundred in length.

Descent of the raydodo cross it. Simetimes these outs or pits are 10 or 12 varsa wide and more than a bundred in length.

The Escaleras Were of Muescas

these cuts or pits are 10 or 12 varsa wide and more than a hundred in length.

With one arm the raymon carried and restrained La d aunon, while holding the kew with the other, and without heeitzing would cross a double weight. The girl was all the inneed cross double weight. The girl was all the time enclassed in the presence of couple weight. The girl was all the time enclassed in the presence of couple weight. The person of the presence of couple weight. The presence of the companionship of a more than the preferable to the companionship of a men whom they have not the beam of the preferable to the companionship of a men whom they do not love. "Au juy, son of the Josh homen they do not love." Au juy, son of the Josh homen they are the ferricken. "It is the ray do not of the tros or pate, "It she has east him into the targhested for the tros or holds." They continued their the two barreteros reopped horrorbinday, and by one of the farso or affect in the they are they are and the two barreteros reopped horrorbinds. The farson the their they are and the two barreteros reopped horrordenly, and by one of the insulate, was illuminating the insulating in the form of the farson the farson into which, by a cable, the vayuetor head reawing the anormous spider that had when they are at a distance the light to the tent. Why would be a meaning the meaning the meaning the pursuers were advanced in the meaning the meaning the pursuers are meaning. The proving a meaning the meaning the pursuers are the meaning the pursuers are meaning the feet of a meaning the pursuers are set the meaning of the pursuers are meaning the pursuers are set as the pursue and the pursuers are as the meaning the pursuers are as the meanin

CORRESPONDENCE.

We admit, unindorsed, opinions of correspondents.- .£Ds.

Oregon Mines.

A New Concentrator.

ducing mines, and many more promising pros EDITORS PRESS:—Your Oregon mining news seems mainly confined to Southern Oregon—of all our quartzfields probably the poorest. The castern portion of the State has some good pro-

pects awaiting tardy capital.

ducing mines, and many one fore State has some good progress awaiting stardy capital.

Gouse by a susual, by putting on mills where some process on the core of justing washing your copie (Fire Creek mines), where I have some one to justify machinery.

Having just received a letter from Cornugate of the core of justine shour a them or copie (Fire Creek mines), where I have some interests, I determined at an estimated cost of state of the control of season of the control of the

Workland, Ogn., Dec. Th.

Nevada Alum is found in geveral places in Nevada, and in one or two places in a word a services that it would seem the deposite might be profitably worked. In Revadange in such quantities that it would seem the canyon near the leading mines, is quite an extensive bed of alum. It occurs in a decomposed collicious tuts filled with the mineral. A small spring of water that rises in the center of the bed is thoroughly saturated with alum.

The stream from the spring sinks after running 100 yards, and at the point where it sinks may be gathered large quantities of pure orystalized of alum. In fameralda county, a few miles north of Silver Peak, is a curiosity, a few miles north of Silver Peak, is a curiosity in the after of sum and suppur.

The vein is about three feet wide, one-half of the other which is quue crystalized alum, and the other half of silver leak of alum and suppur.

The vein is about three feet wide, one-half of the other river, about 10 this is also found in the court of this city. In several of the sulphur, chairs on the Siste it occurs in seams from the thickness of a buile blade up to veins several incheses of a brick blade up to veins several inchese in a brick blade up to veins several inchese in a brickness.

OWEN'S LAKE SORA.—The present terminns of the Caren & Colorado railroad, two miles below Keeler, Inyo county, is to be christened below Keeler, Inyo county, is to be christened beland in place of Jiggerville, the name by which the station is now designated from will be the port or depot on Owen's lake from whence the borte or depot on Owen's lake from its waters will be shipped. The Virginis its waters will be shipped on the slate from soda from the lake by evaporating the water purved an unqualified success. The soda left in the vats veovasted on the slote bappen proved an unqualified success. The soda left brough openyed in vats veovasted on the slote one seembling bunches of crystallized quartz. The soda company has accommilated several hundred tone by the vat countries into 1982 and 1982 a

THE BURNING COPPER MINE.—It is reported that the dree in the Calumet and Heels copper after the first best gained such headway that it is be-lieved it will be necessary to the whole are it would sustained with water, in which case it would sustained with water part of the percentage of the contraction of the copperation.

The President's Message.

to show the revine to permit of a wheel being setting the whole length, and when the whole in places on the upper part to lix mild have in places on the upper part to be distribute on the water in passing might be nearyon will placer mining. The ground at the canon we have the part of a living in the placer who mild have the pears of the pea

## A Return to Fractional Currency.

now here to pay a tax of 16 cente per pendon on seeds, bulbe and soines, as that is the postege on this class of inail matter. It is desired to nather one this class of mail matter, it is desired to have seeds and plants olassed as third-class mail matter, and subject to a rote of plants of postage of one ceut for sech two conness, or eight cents per pound. The rate in Canada or eight cents per pound. The rate in Canada seeds is only our cents per pound. Any plan that the conness is only our cents per pound of plants and will be aupported by an ine-tent of plants and will be aupported by an ine-tent of plants and those cents. The desired to soblish the three for money orders for \$5 or less at a charge of three cents. The National Grange at Lansing, Mich. The National Grange at Lansing, Mich., oted to bely this work for postal impresement of three cents. The set of the transmitter of three cents. The lational Grange at Lansing, Mich., will take bold in sarness of the set ideas well as the center of the set of the center of the set in the center of the center of the set is the center of the ce postage on seeds and plants. Every planter oistion is the name of an organization that has been formed to promote the reisence of fractional currency, and also to secure a reduction in the The United States Postal Improvement Asso-

The asseciation in the continuate by the association in flavor of the return to fractional ourrency is every the return to fractional ourrency. At present a large majority of our currency. At present a large majority of our currency. At persent a large majority of our currency. At yors wuch to their disconstitutions are bindered in making remittences in continuate the best state. By the most cases, or postal notes must be used. In most cases, or postal notes must be used. In most cases, distance from the onestest morey-order postol cases, being reared as note, and are not intended as a cirrence of the postal note, before the postal note, and are not intended as a cirrelational currency. They are difficult to obtain. They are no safer thay are difficult to obtain. They are no safer they are difficult to obtain. They are no safer they are difficult to obtain. They are no safer and the experienced the disk moust note. It is swell as to collect the payment on it, all he is supplied to many and are no safer of the accurate to secure one of these notes are requested to of fractional currency."

All interferenced the disk matter are requested to of accurate from Congress an early reisance must to secure from Congress as nearly reisance apply by mail for or interference of the proceed to the secure of the secure from Congress and the upon of these congresses of the secure of the proceed to the secure of the secure

#### The Lead Tariff.

The following is a copy of the letter being sent or the letter being sent out by the Salt Lake Chamber of Commerce to sent out by the Salt Lake Chamber of Commerce be sister organizations throughout the West on Derk Sit.

Derk Sit.—At a meeting of our Board of Directors, it possible, Onegress meeting to Monday, the 12th inst., to consider whit meeting meeting to Monday, the 12th inst., to consider whit meeting which is congressed to the consider whit the selection of existing the meeting of the confideration of existing the selection of existing the confideration of the protection of part increase who can deposite upon the confideration of the part of your community. We will pass resolutions that increase the confideration of your increase remaining the protection of your increase remaining the grad to have you occuparted which or we will be appeared to the protection of your community. We will be a protected out.

The Sacramento river, for ten miles below Radding, is said to have been taken up for mining claims. The irrigation company formed at that place expect to diminish the volume of in coarse gold, heretofore covered with water, can be worked, hence the tush for the land.

In this oity for the 11 months of this year there have been built 10% buildings, of the value of \$6.116,990, against 1165, of the value of \$5,734,033 for the same time in 1886, thus showing a decrease in number of 89, and a gain in value of \$532.957.

producer in New York on the basis of 1s, 3d., producer in New York on the basis of 1s, 3d., the present price for a better one than 0,12 phoepor ore phorus, \$12.27 a ton, while a 0,12 phoepor ore would net him laid down at Putsburg, \$13...50. Even on the basis of 1s, 4d, per unit the English assists a ton better than would have been obtained at Pitteshurg, and in most cases freights are no greater to one point than the other. This bardly bears out the impliestion that the English market is a better one tion that the English market is a better one than the American produces of manganese. The prices obtained for the American producer of manganese obtained for the foreign produced the cargo referred to are seen of in this foreign and the foreign of the foreign of the seen of manganese obtained to are as good in this country as in English do are as good in this content. The New Water-Mill.

tote. The mechinery is now being run up to to ull speed, and is working well and smoothly. All speed, and is working well and smoothly. All speed lies clock-work. But half of the country plement of stamps and amalgamating appearatus as a present in operation. This is being run to the country of the countr ore. The machinery is now being run up to full speed, and is working well and amoothly. All goes like clook-work. But half of the complement of atmes and are A Virginia Enterprise reporter took a passing glanoe through the pan-room of the new water-mill at the Choller, and found 20 stamps, 10 pans and 4 settlers in full blast on Potesi

unince.

The ore bins are full of ore—with enough coming out of the mine to keep them full.

There is nothing to prevent a successful run, and soon we may look for a Potosi bullion shipment.

There is nothing to prevent a successful run, and so nothing to prevent a successful run, and soon we may look for a Potosi bullion ship.

Half of the plant has been arranged to work but and soon we may look for a system invented by Achbert Logan, one of the pioneer millmen of Mewada and for many years superintendent of Waster.

Logan, one of the pioneer millmen of Mewada and for many years superintendent of water.

By the Logan system no settling tanks are steam jecket of the superintendent of the pans steam in the base system of continuous samigranstion. There have been been steam to the batteriate base in the Boss system of continuous samigranstion.

After leaving the series. This charging the series. This pans are of her grant and of which the pans are of her granting the series. This is done to keep a soon through the series. This is done to keep at the continuous fow of pulp and for convenience in working the series. This pans are of peculiar continuous fow of three pans of pound, on the shoes used as a means of peculiar continuous for the spans of pronting the series. The shoes used as a means of grinding the spans of peculiar continuous for the shalt shoes used as an eans of grinding the spans of peculiar continuous for the shoes used as a means of grinding against one another tre resticator in the shoes used as a means of grinding against one another tre resticator in the shoes used as an ean of settlere and the wore the shoes used as a means of grinding against one another are reforging the shoes used as an ean of settlere and the ordinary find. The Pelvon wheel said be ordined to the shoes used as a means of grinding the spans of the settlere and the said the each of the shoes used as an ean of settlere and the said to the shoes used as an ear of the sounding strong the strain of the short of the short on the settlere and the said to the short of the short on the settlere and the said to the short of the short

and set up in the most and state the mill and sets of any share the most and sets of the most and sets of the most substantial manner.

Six-Mile Canyon A Small River.—From the Felton wheels now in use at the mill of the Olity Blectric Light Co., there is a discharge of a guite a large creek when turned loose in a canyout 130 miner's inches of water. This makes you where there is room for it to spread, and quite a large creek when turned loose in a canyon where there is room for it to spread, and whirl and tumble about Alter being released males from the closed flumes and plees of unyielding iron in which they have journeyed some 30 miles from the Sterras, the waters seem glad of more a closed flumes and leap down rocky terraces with bousterness of the millimen down rocky terraces and subspect to be indeed "glad waters" as they appear to be indeed "glad waters" as they appear to be indeed "glad waters" as they appear to be indeed "glad waters" as the beares of the millimen down rocky terraces and water she beares of the millimen down slong Six-mi e the beares of the millimen down slong Six-mi e canyon. After their beadlong run, their many leaved while looks admiringly on as his wheels of the little waters are nount upon the wheels of the little water ounts upon the golden grist. They are grind away took admit a page and may never the surrond down the folden grist. This atterm of water of the millimen, who can be in the state of the will winter at least—and may never be the page of own the least—and may never be surrond down the Coller glad water and only in the Sure of water the surrond down the Coller grist. Beat a there is sufficient in mills might be run by it, as there is sufficient in mills might be run by it, as there is sufficient. and the state of the control of the

Value of Manganese Ore.

Messre. Ledoux & Co., obemists of New York City, in a most interesting letter to the Engi-meering and Mining Journal, speak of the uses and value of manganese ore as follows:

ei esanagaam doidw tol sesu owt era eredT "

vilat. Chemical use. The demand for this vilate. The demand for this purpose is comparatively enail, ali liurope taking purpose is comparatively enail, ali liurope taking mot more than 10,000 tons per snaum, of which 4000 tons goes to Liverpool. The principal varies from 10 pence to 12 pence per unit of percey to 22 pence per unit of percey to 22 pence per unit of percey to 22 pence per unit of pence, that the ore shall run as high an expense ore should contain not less than 50 per cent of marganese, not more than 0.10 per per cent of marganese, not more than 0.10 per cent of marganese, not more than 0.10 per cent of pencey of marganese ore should one of more than 0.10 per tent of marganese, not more than 0.10 per tent of marganese, and not core to 0.15 per cent of marganese, while nicked and contain description of the percent is an advantage of percent of marganese, while nicked and colors that of marganese, while nicked and colors the oreas, while nickel and colors the should be allower.

which was read in both honees. The document deals almost entirely with questions of nation al mance—surplus revenues and tariff reduc-The Congress of the United States having reassembled at Washington on Tuesday, Dec. 5, President Cleveland sent in his message,

Manganese (2.35)

Manganese (2

Lipse cont. Parties of Victor and Parties 
The Richmond Company's furnaces at Eureka have closed down until spring.

The Annual Work Required on Mining ano excente forbidding their regulation by any fixed rules, that Congress left these early

each 100 feet in length along the vein, formed, or improvements made every year tor 1872, ten dollars worth of labor shall be permeaning language as this: "And on all placer they sometimes are, there can be found in none of the local codes of the miners any such une venture to say that, roughly wor minera themselves, who, appreciating their peculiarities, would legislate accordingly; and located placer claims to be looked after by the

the May law are, of course, subject to its provisions, though, as is well known, most claims

properly done upon them is not lost. While on this subject it may not be out of such as shafts, open cuts and tunnels, and work In the case of quartz or vein mines, the law is all well enough. These have definite limits and can be developed only by certain means, of this kind were taken up at an earlier date.

ing on these facts the courts are all the while made, the miner is apt to be careless. these particulars, as also in the measurements description given of them in the record. In that the claim can be identified through the the claim, unless there be such natural objects monument should be placed at each corner of can be readily traced, to which end a conspicuous marked on the ground so that its boundaries lorgotten that the location must be distinctly strict compliance with the requirements of the statute is always advisable. It should not be s, smislo gainim gaiteoote and relocating mining claims, a place, perhaps, to remind parties interested

form their action to this view of the court, till such time as it is reversed or otherwise corsession, the holders of such claims should con placer claims in order to keep good their pos-Supreme Court having decided that a certain all amount of work must be done annually on all In conclusion, it should be remarked that the growing more exacting, the disposition to take advantage of the locator's laches increasing also with the lapse of time.

Lead Mines and Protection,

lead and lead ores could be shown with a near could not be worked to such a high percentage such proposed reduction would have upon the test against the proposed reduction by Congress of the tariff on lead. Colonel O. J. Hollister of Commerce in Salt Lake on Monday to proredmadO edt ta tem nen gninim to redmun A

approach to accuracy. The following resolution was passed unani-mously and ordered telegraphed abroad: The effect upon the material industries of Utah of a reduction of the customs duty or mixed by the mill process as by the smelting process, and if the smelters had to close down, a large amount of silver would necessarily be lost, mining industry in Utah. Many mines which are being worked here, the ores of which carry lead, particularly those in the Tintic district, addressed the meeting and showed the effects

Mesobea, by Okambor of Verses gainst each of Secored. Mesobea, by Okambor of Commerce, soft Lake City, Take we earnestly protest gainst may reduction of the Sach of Commerce, soft Lake City, which all the dead ones are lead-silver must in this Jean of Society Second.

Such reduction would ruin thousands of our poople; access lead-silver must in this Secore, with all the ore of the Charles of t It was further resolved that the board take

such action for the protection of the mining,

We took occasion not long since to soll the out amine to moinfind gaining for parties to moinfind gaining to moinfind the contract of the cont

seted in accordance with that view, which be determined by local laws, regulations and customs; this class of claim-holders having ot the passage of the avode Act as the to had been supposed that the amount of work required to be done on placer claims located location. Up till the time of this decision it lode claims, without regard to the time of their oent decision holds that an annual expenditure of \$100, is, by the Act of Congress passed May 10, 1872, required on all placer as well as that the Supreme Court of this State by a rerenewal of this admonition. We have also in the columns of the Press adverted to the fact a of ethroach of the new year prompts to a expenditure, they are open to relocation. The expiration of the year, when, in default of such required by law, done upon them before the the necessity of having the annual expenditure,

them have had a frontage of not more than 50 and often not more than 25 feet, while the to shong the rich gulches thousands of from a few hundred square feet to hundreds of Congress intended to exempt placer claims, from this clause of the statute. These claims, be it remembered, are of all sizes and shapes, expended on a thing that had no existence would be to impeach their sanity. Evidently framers of this new law required money to be an absence of yein deposits, or, as they are otherwise termed, rock in place. To say that the sisting of auriferous earth or gravel, implying The term placer means a claim con vision apply to a placer claim, seeing it contains length along the vein, until a patent has been issued therefor. Now, how can this last proпі тем усат тот сась 100 feet in worth of labor shall be performed or improveprovements made during each year. On all claims located prior to the above date, \$10 \$100 worth of labor shall be performed or im patent has been issued therefor, not less than declares as follows: On each claim located after the 10th day of May, 1872, and until a Mow comes in this congressional statute and vein claims to keep good their possessory title. of work that should be done on both placer and left to regulate by their local laws the amount seems to us the correct one.

Let us look at this May law and inquire a little into the condition of things as they existed up to the date of its passage. Prior to that time the more in each district had been test that the coniners in each district had been test in the coniners in the

improvements being done on this sort of ground.
The miner, at such time as he has water, sets
his sluice, and, shoveling the dirt in, continues need for any exploratory work or permanent the winter be a wet one? In no event is there time in the winter, or perhaps not at all, unles placer capable of being worked only for a short annually a certain amount of money on ground situated like that? Or why should such expenditure be required of the owner of a dry breegs of nam a gairings at ed ereat bluow of these claims can do nothing but await the movements of his neighbors. What sense drainage. Under such circumstances, the owner bns teltuo nistdo nao vedt tedt medt dguordt so situated that they cannot be worked to advantage or even worked at all till others lying below them are worked out, since it is only era smisle tith bas delig uted the claims are while in other cases the wet ones cannot be worked in the winter at all. In some instances e worked only for a short time in the winter, feet. The dry placers can, in many localities, draulic gravel banks have a depth of 200 or 300 more than a foot or two deep, many of the hyoccupy the beds of flowing streams, others sections of the "Dead Rivers." Some lie on the high ridges, some slong the deep ravines.

While the shallow prairie diggings are often not be a second of the shall of the shall of the shall of the shall of the same and the shall of the facilities that exist for working them, are also widely different. Some of these placer claims claims are opened and worked, as well as the The means by which these various kinds of and from each other, not only in the partien-lars mentioned but also in many other respects. These placer holdings differ from vein mines pave covered each a thousand acres or more, sains of some of the great hydraulic companies

prevent any change in existing conditions. This week sees the completion of the new against this, and strong efforts will be made to

Ogn. The line is a very important one for the commercial interests of San Francisco. It also railroad line between this city and Portland,

from lead. Meetings are being held to protest

Lead miners are rather nervous just now in first edt grivomer to teejorg the tariff

the country, has had a marked effect on prices. Calumet and Hecla, the greatest producer in

however, they are being reopened, and work

The steady advance in copper brings rejoic-ing to the hearts of the copper miners of the United States. Prices have been low for so

Passing Events.

Business Announcements.

MEGNAMIOAL, PROGRESS — Weoght-lton of Concounts where the Media of Ingenious Willows and Wedes in December the Media in Keyst Leogmodyless by Electricits; Improvement in Keyst Learhor Links Beiling; A kew Steel-Making Processing Cassinger, Colordor Copper and Vickei; Information of Media of

MISOBLIANG, S85. Apparatus, 100. CORRESPONDED MINES, S86. CORRESPONDENCE, Overvoor Mines, S86. CORRESPONDENCE, Overvoor Mines, S86. Misoble Mines, Misoble Mines, Misoble Mines, Misoble Mines, Misoble Mines, Misoble Mines, Mill, A Return to Fractional Chreneto, S81. Mill, A Return to Mill, A Retu

at Galena, 389.
ILLUSTRATIONS.—Vertical Section of Granite Mountain Mine, 388. Apparatus for Passing Ore

EDITORIAL.—The Granite Mountain Mine, 385.
Passing Events; The Annual Work Required on Mintng Usings, Land Mining and Protection; A Gold and
Silver Gerblicate Ourrency, 388. Copper; An Improved Amalgametor; Foundry Motes; Mines and Mills

TABLE OF CONTENTS.

Saturday Morning, Dec. 17, 1887.

SAN FRANCISCO

SCIENTIFIC PRESS PATENT ACENCY.

A. H. BEWER, G. H. STRONG.

A. T. DEWER, G. H. STRONG.

Entered at S. F. Post Office as second-class mail matter

our latest forms go to press on Thursday evening

Address orrespondency and business correspondence and Drafts for this paper in the name of the firm.

Гочрои Аскит—Агевр Е. Аии, 63 and 64 Иеw Broad

Advertising Rates.

Terms of Subscription.
Annual Subscriptions, \$3. Year annual absences will be be paid for at the rate of \$3.50 per annua.

Office, 220 Market St., N. A. cor. Front St., S. F.

DEMEX & CO., Publishers.

SCIENTIFIC PRESS

PAINING

long that many mines have had to close.

Gold Quartz Mine Wanted—J. T. A. Mechanical Engineer—larsel W. Knox.

this State and Oregon.

opens up for settlement a very rich region in

winter, owing to the difficulty of obtaining sup-THE Tuscarors Times-Review says: Opera-tions in Navajo Queen, Seal of Nevada and East Grand Prize have been suspended for the

to soffio soft acceptance of the office of JOHN D. SPRECKELS has forwarded to Gov-

deposit at any mint or assay office of the United States gold or silver bullion of a certain fineness By the provisions of this bill any person may creation for this country of a new currency. Senator Stewart of Nevada has introduced in the United States Senate a bill looking to the

United States as are made expressly payable in Placer claims located since the enactment of otherwise stipulated. After this enactment no all dues, public or private, except where, prior to the passage of this law, it shall have been claims located prior to the tenth day of May, to be a legal tender at their nominal value for and receive therefor coin certificates which are

melting and wool interests of Utah as they

protect their interests, and would gladly pay Utah in sending a delegate to Washington to the people would co-operate with the people of from Wood Eiver, I. T., he was assured that may deem proper and necessary.
President McCormick stated that by a letter

It was just because of these eccentricities and | italia the United States instead of in Mexico. They did not like the outlook with respect to titles in that region, and will invest their capan area of country, but water is very scarce. A PARTY that left Santa Ana, Lower Califor-Co., for the quartz gold mines, Lower Califor-nis, has returned. They found gold over quite

people decry the quality of our wine, flour, or sirons of keeping up the war on that metal, is something inexplicable. As well might these mate use of silver seems about to cease there should be found those in our own country de-Why when this foreign opposition to the legiti-

with similar opinions or sentiments of like pur-The leading journals of Great Britisia abound

in England that the reign of monometalism in

daily adding to the sentiment rapidly growing

by the British Gold and Silver Commission is

such a plethora of that metal as was supposed." Finally, it concludes "that the testimony taken

ton ai erect tant etal lo encitacioni era erect

tanch advocate of this doctrine:

is not far off. Says the London Graphic, long a

fight against silver, the end of mono-metalism the British press, or at least a large and influential portion of it, goes so far as to give up the

to fail is now a foregone conclusion. When

these metals to the prejudice of slaver is bound That the attempt to discriminate between

which capacity they should be maintained

ecognition as the sole measurers of values, in

netals and of their just claim to universal

comprehension of the money function of these

ducer, they have a thorough and enlightened

the world, and for many years residents of Mevada, for a long time the leading silver pro-

fornia, the greatest gold-producing country in

Both Jones and Stewart have had a schooling that entitles them to speak authoritatively on these and kindred subjects. Reared in Cali-

gent and exhaustive manner, leaving little

has discussed that question in an able, intelli-

champion of bi-metalism in this country, he

apecial study, bringing to its consideration not only extensive reading, but also a large practi-cal experience in matters of this kind. As the

made the problem of currency and finance a

Stewart and his coadjutor, John P. Jones, Senator from Meyada, who have no doubt co-

on the question here mooted than William M.

more capable of suggesting suitable legislation tes provisions at an early day. There are not not one of it two men on to look the contract of 
move to take it up and address that body on

lliw ad tadt soiton nevig gnivad rodtna ati

andject, we await the discussion of Mr. Stew-art's bill, which is to come off in the Senate,

miners a very costly one, as they are obliged to pay the Government nearly seven and a half million dollars per year for this service.

ure; not only so, but it proves to be to our

ury vaults really seems to be a useless procedsuch purpose. To coin large quantities of allowary in the sub-treas-

ion deposited in the mints made into coin for

for there will, no doubt, be enough of the bull-

tificates, he can at once convert them into coin,

-lia to blog ai eldsmeeber, reque andt evad ew

What more safe or convenient currency could

we must say that we are most favorably im-pressed with the provisions of the bill proposed,

first of a regular workings in detail,

This is, of course, a radical and sweeping neasure, and, while we have not as yet had

nor less than \$2,000,000 per month of standard

1878, authorizing the secretary to purchase silver for the coinage of not more than \$4,000,000

coin, with such additional coinage of silver as public necessity may demand. The Secretary public necessity may demand, to regulate the of the Treasury is empowered to regulate the amount of coinage authorized by this Act, which repeals the law passed February 28, 21878, authorizing the secretary to muchae silvers and the statement of the law passed february 28, 21878, authorizing the secretary to muchae silvers.

A Gold and Silver Certificate Currency.

silver dollars, to be legal tenders.

r? If a man does not want these cer-

Meantime, for further enlightenment on the

.llid sidt to gaimant edt ai betarego

more to be said upon it.

that country must soon come to a close."

work as long as the water lasts, when he goes away, leaving his claim till the next winter or

Forestry Commissioner.

a line which, with all the branches, will be some 60 miles in length, and 12 miles of it are now contract is a large one. Some 12 miles of cable read are being built. They have laid out there

difficult to supply iron fast enough for the work road at San Diego, for a road at Ontario, and for one from Rono. The iron work for half a dozon iron bridges is also being prepared, It is The mills are also at work on a great quantum of the work of the registry of the state of the contract of the tity of rails.

The steel man-of-war Charleston, now in wor in works of nonstruction at the Union Iron Works

Spreckele Bros, have given orders to the Union Iron Works for a new steel tugboat, She on the Potrero, is nearer completion than the Baltimore, which was awarded to Cramp of Philadelphia at the same time.

eas to comply with the present pressing desoon, as it is difficult for the combined comsumed that others will have to be ordered and will be stronger than any other. The in-creased work of late has necessitated the con-struction of additional tughoats, and it is preyad out no teod testest has regest on the bay

### Mines and Mills at Galena.

after being run through a rock-breaker and Cornish rolls, is ground in Hepburn pans, there being six pans and three settlers. The present capacity of the mill is some 36 tons of ore daily, which Mr. Hinbes etates he has took him through the mill, which is conveniently stranged for doing its work. The ore, C. P. R. R. Mr. A. G. Higbee, manager of the Blanco mill, entertained our informant and tain some notes of interest. The camp is le miles from Battle Mountain, a station on the From a gentleman who has recently made a

has been making expects to work the ore to a still higher percentage. The machinery is run and from past experience and tests which he to make some changes and improvements in the mill by which the capacity will soon be doubled, Mr. Higbee also states that it is the intention which Mr. Highee states he has succeeded in working to a percentage exceeding his antici-

by a fine 100-horseper aregine.

The assay department, which is nicely and conveniently arranged, is well supplied with fine balances, chemicals, etc. The retort-room adjoining the assay-room has been arranged with a view to doing good work, and the quantity a view to doing good work, and the quantity a view to doing good work, and the quantity as to the assay and the species.

of the operation. Mr. Highee in looking after the entire busiesecons edt bewods thgis ni maglama end to viit

person, with no limit as regards capital for the advancement of the company's interests, can hardly fail to meet with success while working ness, and attending to the assay department in

A new mill being constructed for a company represented by Mr. W. H. Farrish is expected to be in running order by Christmas, and pected to be in running order by Christmas, and present will work ore from the Bunker Hill and Dwarf free ore carrying a large percentage of gold, and of which there are thousands of tons in sight.

centrators, located at one of the mines. The mill will be a Huntington with Frue con-

ore in which gold predominates being of good grade and easily crushed, the naesgenent of Mr. Farrish, ought to realize a bright future.

for years (save the persistent efforts of the oldtew of the many good prospects and the monty of the many which has been lying dormant In mentioning the mines of the two new com-panies, our informant calls attention to but a

thiw latique to aloal edt tot (erotoequorq emit

ant, as also many others, will all bear examina-tion, and need but the sid of capital and further son, and a property represented by our inform-Morgan, one of the early prospectors of the camp, can show development and good prospects. The properties of Judge McBeth, the McIstader Bros., Judge Moore, and the Stewart Bros., Jas. Ossey, J. A. Blossom, Banj. F. Willson, and a property spanning the property of the statement of the spanning of the statement of the statement of the spanning of the statement o the Ramdhor Bros. and others, showing considers, srable development with a good average grade of gold and silver ore. The claim of James tity of high-grade ore. There is a property of he speaks of a property being developed by the Driscolls, showing a considerable quanpractical men to represent it.
Referring to "many other good prospects".

development to add to the list of paying mines

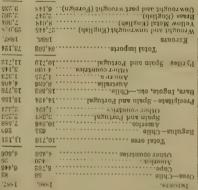
of the camp.

An Improved Amalgamator.

forated to admit of exit of the ore and regulate found that these wings canse a too rapid dis, charge of the ore. In this new mechine the wings have a circumferential hoop which is perit passes through the mercury. In practice it is this sort generally bave wings secont ed to the sort of the satisfies of lessey renni edt to mottod it in the satisfier of th body of meroury contained in a space between this vessel and the outer one. Amalgamators mottod of the original and another bottom and a natural beginning bar lessey evitator a to The same state of the contract of T are so and the contract of 
outer vessel. O is a central pipe having a hoper to the bot-per at its upper end, which extends to the bot-tom of the vessel B when it is open. The hight of the pipe C is snot that the weight of ed by the rollers a a from the apper edge of the -di na si A bna lessey novi vzanoidste a si k -dioqque lessey evitator yllaiding vo evitator ven oross-section on the dotted line X X of Fig. 1, In the accompanying drawings Fig. 1 is a plan of the amalgamator without the hopper. Fig. 2 is a vertical ecotion, and Fig. 3 is a

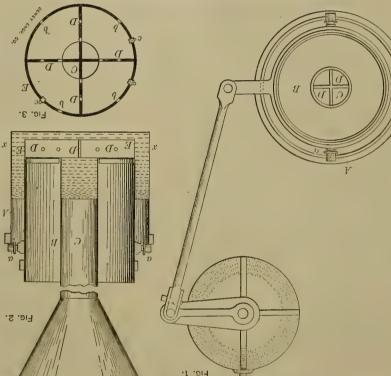
> The following imports and exports for the ,7881 has 3881 steads of the years 1881 and first other leading staple, as to so seek to bring and French consumption of copper imported disailed are losing their force. The following imports and exports for the

estimated in tons of fine copper, are taken from the Board of Trade returns, and from statistics kept by James Lewis & Sons to supplement their



slight advance were made, and in the fourth week there was an advance of embination for fon in one day. Rumore of combination for the limitation of production on the part of the apiet American producers and the Ric Tinto

Fig. 1. the limitation of production on the part of the is shown by the figures. Chile exports to the late the column of ore, or ore and water, will over chief American producers and the Rio Tinto of November aggregate 26,375 tons for the come the resisting body of mer-A decrease in stocks on hand of 10,418 tons Difference of exports and imports.



APPARATUS FOR PASSING ORE THROUGH QUICKSILVER.

The | year. Stocks of copper on hand aggregate 48,- | cury and allow the ore to pass to the surface of

terable or adjustable, some of the holes are threaded to admit of screws E being inserted in trifugal force from the wings, and, in order that the combined area of the holes may be althe exit of the ore which is thrown off by cen surrounds the wings DD and is secured to their ends. The hoop has a number of holes, b, for body of the mercury, and B is a hoop which end in ero edt etatiga ot & leasev evitator renni DD are wings; secured to the bottom of the the mercury.

contact with the meroury, and better results obtained. Joseph Wilkins of Baltimore, Md., is the inventor of this improvement. space to another. With the perforated hoop,  $\mathbb{E}_v$  surrounding the wings  $DD_v$  as described, the ore is held for much greater length of time in Is ot perforations are found accessary to al. The wings, DD, may also have holes in them them, as shown in Fig. 3.

## Foundry Motes.

Suffer street line. The rolling-mills are building the total outright, delivering it complete. They are also doing the iron work for the electric road at San Jose. Their Los Angeles the Pacific avenue road, the extension of the The Pacific Rolling Mills are quite busy at present, having some 750 men on the pay-rolls. A great deal of work is being done on building cable railroads. About 100 men are at work or the Pacific arenne road, the extension of the

> setate betial ot the year, in tons: her supply of copper, the following table is in-teresting. It gives the source of imports into Liverpool and Swanses, for the first ten months

As showing where England obtains

dorway. Repe of Good Hope. Lustralia Lundries 847,8 69 pain (Precipitate) Peru .... etaf Piver Plate ... Mwer Plate ... Mwer etafa ... Mwer

given by Mr. J. A. Blossom and others, not exceeding 15 cents per ton. The grade of ore, from recent developments, is said to have more the ore can be delivered at the mill, which is about ready to start, at a cost, from information Pitteburg mine, Lewis district, Mev., by which A TRAMMAR bas been constructed at the

to vising a gain to the Matines a chair of special Universities of the Matines of than doubled in value.

BAD half-dollars and counterfeit greenbacks sity. It is a great step forward, ward as to get shead of a lot of the old civilized It is a great step forward, and so far for-

French consumption of copper imported direct, Ban half-dollars and count 55,317; English consumption, English exports are in circulation at Stockton. bas noitqmuenoo deilea ;810,81 ,40erion and copper to France, 6819; French consumption of copper imported direct, 11,199; French consumption of English copper and copper importlish home consumption, 35,299; imports of all kinds into France, 9646; exports of English Lugland, 48,729; British production, 486; Engfollowing results in tons of fine copper: Imports into England, 73,124 tons; exports from

> per ton amid great excitement and no sellers on ing of this mine came, Chili bare advanced \$10 On the 12th inst., when the news of the cavof that of the whole Lake district. The first nine months, of this year the Lake first nine worths, of this year the Copper.

yield of copper in this mine was two-thirds

less than a couple of years, Last year's

ni rebro gaistrow boog ai tuq ed toanso

the five in the mine has destroyed the supports in the main shaft, and about an acre of the mine has caved in. The property

Now the reports are to the effect that

Sall saw essenced evitaraquoc edt tanguA 2168 tons in the same month of 1886-a decrease of 656 tons. In the month of

produced in September 1512 tons against vae not yielding as usual, however. and Heela mine, Lake Superior, the largest producer of the Lake district, That mine

up. Then came the fire in the great Calumet

matte (Montana) and had 5700 tone still to be delivered, all bought at 8s, per unit. Since then the market has gone steadily

received that month 3523 tons of Anaconds range of prices. But the smelters were more fortunate than the consumers in that they came at a time when they were very scarce of scocks, and so quickly that they were unable to supply themselves at a lower range of prices. But the smelters were more fortunate than the commence that

emelters, the rapid advance of that week Unfortunately for English consumers and

days of October 15,000 tons of Chili bars

week being over £4 per ton-np to £44 5s. being paid for cash. For the last eight

23d. on the 3lst, the total advance for the 9s. on the 27th, 20s. on the 28th, and 11s.

active buying, cash bare advanced 11s. 3d. on the 25th of October, 17s. 6d. on the 26th,

Company became prevalent and consider-able excitement resulted, Influenced by

per was dull, but in the third week sales at

Oscober last symptoms of improvement ap-peared. In England, where the price of copper is set, during the first part of that mouth op-

ai tud .esetter times. But in

os bellegmos erew senim emos sant adanom

bestieve as an asset seat searm requosed? The session of the season of t

Copper.

and Japan having been unusually large for several months pact.

this metal is on the increase, shipments to China vember, and nearly eight million since the lat day of July lest. Even the foreign demand for

ON to tal and some stellon dollim a nadt erom

besaeroni evad ot betroqer ai stallob tevlis bra

despite these assaults. The circulation of stand-

no longer of much avail. It grows in popularity

decrease of 656 tons.

Were sold.

ket, nevertheless. the market. Prices here have advanced in con-sequence. The whole production of Great Britain only aggregated 496 tons for the first ten months of this year, but she rules the mar-

fornia also produces some, but not a great deal. About 1000 tons a year will cover our produc-Ast, mever remisses, the Arizona mines which charted y some of the Arizona mines where the bare been closed down have started up, and others are getting ready. The advance in prices will be a great thing for the copper miners of this country. Muchana had Arizona are our principal producers. Cali.

The European statistics of copper for the fart mine months of this year, compiled by James Lewis & Sons of Liverpool, show the tion in this State.

## SCIENTIFIC PROGRESS.

ACTION OF MACHETS ON LIQUIDS.—Prof. S., vive and Lee University, at Lexington, Va., writes as follows to the American Journal of Science: Some weeks ago one of my students, Mr. J. C. Child, and strument, simply repeating well known experiments, into the Maching well known experiments, simply repeating well known experiments, simply repeating well known experiments, simply repeating well known experiments. Into a glass tube of several diamagnetism of liquids having failed in our content of the content of the series of the liquid sea the of a bond quantity of liquid was new force which was fact of a bond quantity of liquid was introduced, forming a method which was new force when the find maching the food of lies length, who was never yearlies, which the liquid nearly between the poles. When the courrent was furning the of its length, the wood spirit through a girstance of about of its length, the wood spirit through a girstance of about its of course, a function of the reserving the trough the tube in the direction of its length, the wood spirit through a girstance of about the continueter, wood spirit through a girstance of about its length, the wood spirit through a girstance of about it is of course, a function of the reserving the trough the tube in the direction of its length, the wood spirit through a girstance of about the to includ was very evidently repelled, and stance through the tube in the direction of its length, the wood spirit the mount of the reserving the poles. When the countred we have furned to subscion and friction as to make the board to include the motion is, of course, a function of the reserving the motion is, of course, a function of the receiptor the board to course, a function of the receiptor the wood spirit the magnet acts as a section of the board to one of the motion is of the motion of

THE VELOCITY OF A STEAM JET. -The BOS

andiences.

THE VELOCITY OF A STEAM JET.—The Boston John Steam d. Pend upon where Se being saked the following question—". Does the velocity of a jet of steam d. pend upon the size of the hole through which it seespes ?"—Lanswers set follows : Job, the being which it seespes ?"—Lanswers set follows : Job, the jet world not increase with the velocity of the jet would not accumulate if the jet were closed. Sinced in the pipe, and where the pressure is mered in the pipe, and where the pressure is more and the velocity of sees and vapors a cot like injuried in dowing through orthogonal pressures, and the velocity of sees and outside pressure in orthogonal pressure in orthogonal pressure in orthogonal pressure in orthogonal pressure is increased and the absolute pressure in orthogonal pressure is increased and the distinction of a greater of the sheam expands to the carbide pressure and to the steam expands to the cutside pressure in orthogonal pressure even to the extent of a perfect wour increased and the inside pressure is increased and the steam expands to the cutside pressure and to the steam expands to the cutside pressure in orthogonal pressure even to the steam of it is not less than 50 per cent of the inside form the steam expands to the cutside pressure, form the steam expands to the cutside pressure, it is not less than 58 per cent of the inside form of the steam expands to the cutside pressure, it is not less than 58 per cent of the inside form of the steam expands to the cutside pressure, the steam expands to the cutside pressure, the steam expands to the cutside pressure, the steam expands to the carbon of some its not less than 58 per cent of the inside form of the volume due this pressure of 58 per cent of the volume due this pressure of 58 per cent of the volume due the steam expands to the cutside pressure of the inside the larger than 58 per cent of the inside the steam of the cent of the steam expands to the cutside pressure of 58 per cent of the cort lavorable than 58 per cent of the larger than with the inconvenient method or update in with the inconvenient method or update.

STEEL CASTINGS.—There is no doubt that steel castings are daily finding new markets engineers we find that a very large number point out as an inducement to buyers that appears in the casting parts of their machines are now made of cast asteel. In all perusasion, we find the castings are made of steels wore the week we had the perusasion and the casting are made of billty of wrunght iron and east steel when used as arms to pulverize minerals. The arms made of wrunght iron atoed with steels. The named of twought iron steed with steels. The arms made of wrunght iron steed with steels. The arms made of wrunght iron steed with steels. The arms made of wrunght iron steed with steels. The sum of the unionists was strong, and steels wore out much of dismemberment,—Boston showed least sign of dismemberment,—Boston Journal of Commerce. Ingenious Inprovement in the Manutracture of the observing in the manufacture of tin casa for preserving food is being introduced, the plan consisting food is being introduced, the plan consisting food is being introduced, the plan consisting presend on, and the can is hermetically scaled, presend on, and the can is hermetically scaled, water boiled in a fin thus closed has failed to force it off, although the steam pressure has burst the can itself. A penny piece, however, formed around the top of the cover, with the formed around the top of the cover, with the formed around the top of the cover, with the formed around the top of the cover, with the the can as a fulcrum, raises the lid formed around the top of the cover, with the the can be cover, with the shoulds of the can as a fulcrum, raises the lid formed around the top of the cover, with the her one of the tin on with the lid fits is formed at a very slight is made at a corresponding angle, no older being made at a corresponding angle, no older being used to form the joint, By means of this is made at a corresponding sngle, no older being undered a remarkably clean, quick and simple operation, contrasting greatly in these respects operation, contrasting greatly in these respects in vogue.

Colorand O commerce.

Colorand Colore may be communicated that II different colore may be communicated to well-cleaned copper, and eight to nickelt well-cleaned copper, and eight to nickelt colore may be communicated to well-cleaned copper, and eight to fixed add, 500 grains; water, one quart. After the cellistion and the metal is afterward immersed therein. At first a gray color is obtained, and their and encessively to maroon, red, etc., and finally to blue, which is the last color. As out for such and ancessively to maroon, red, etc., and ancessively to maroon, red, etc., and finally to blue, which is the last color. As consultance and stances that enter into the composition of the solution cost very little, the process is a clean one. It is especially applicable in the manufacture of buttons.

STEAM VS. WATER POWER.—The cost of steamer power in small amounts is greater than a steam-power in small amounts is greater than in large amounts, but for mills requiring 500-borse power or more as economical results can more beobtsined which steam as with water, in almost every case. To this add the advantage of the every case. To this add the advantage of this may mean, also consider the better results this may mean, also consider the better results this may mean, also consider the better results as why this estatement is practically proved at the land we can plainly the statement is practically proved at the consider why this estatement is practically proved at the land with a statement is practically proved at the land with a statement is practically proved at the land with a statement is practically proved at the land with a state of the land with other mills can enconsequently of the land with other mills drives by water-power.

Glass and Mancaness in Brass Oastings.—
(Glass and Mancaness in Brass Oastings)

It is said that two per cent by weight of finely pounded bottle glass, placed at the being melted for castings, gives great hardness and at the same time ductility to the metal. Porous cast ings are said to be almost an impossibility when this is done, and the product is likely to be of great service in parts of machinery subject when this is done, and the product is likely to be strength an impossibility to strain. An addition of one per cent of oxide of machinery subject of strain, and disting of one per cent of oxide and of seamhers and disting in the lating an objection.

Berlin Castrings.—The superiority and delitation of the products of the Berlin founders is accounted for in a great measure by the fact accounted for in a great measure by the fact state for the founder's purposes. These sands are found in the brown coal formation or in the Slettin and other places.

Slettin and other places.

# MECHANIGAL PROGRESS.

Weought Inch Mich Inch Mich Menory Weight Schill Sc

INCREASING THE TRACTION OF LOCOMOTIVES been made which fend to show that considerable increase in locomotive traction may be obtained by the use of electricity, Eeferring to these controls and the control of the control of the control of the control of the captuments, the Markhond and Engineering to the control of the captuments and says that a plan for using electricity to increase the adhesion of locomotive drivers to the crease tried on the Central railread of New Tried town of the tests seems to have been preserved in the freedy may be obtained for some of those who to company. Some of those who took part in them, however, are still on the took of the seems to have been preserved in results obtained for some time on two or three engines, but with the conviction that the trials were continued to some times and were not sufficient to warrant faither use of the apparatus. The arrangement faither use of the apparatus. The arrangement connections were made to the incondive, from which connections were made to the times of warrant faither use of the apparatus survives. It was magnetic coil. No very definite description of the apparatus survives, however. It was the paparatus and viet of the paparatus of the incondive, from which the work of a Breach investion were railly of very definite description when less was known in the worker. It was not not be an all of very little inportance, and are only of interesting were as about the an earlier day, when less was known about the subject of electricity than now.

Intercondent was known about the subject of electricity than now.

In the test seems are nown about the subject of electricity than now.

IMPROVEMENT IN KEYS.—The great value of the key recently patented by Osgood Smith of Derland, Me., is that it makes locks very difficult if not impossible to pick. It is more especially adapted for what is known in the trade as the 'Y 'Yab elock'. The object of the inventor was to make the pins, tunblers and bolts of the lock more difficult of access to make the pins, tunblers and bolts of keep fair from the lock by presenting a downwardly curved the lock of the lock by presenting a downwardly curved the lock of the key. The preferable form the lit is curved, and the condition was continued to of key is like an ordinary Vale the curved belief of the key. In this form the key is curved and the lock of the key. In this form the key is curved edgewise, and the birtings which operate the edgewise, and the birtings which operate the sint and the liability of unlocking by unauthorized of key birting the curvature of the key may be used, and may be operate the slot and key may be used, and may be operate and the liability of unlocking by unauthorized form and in the ordinary post present locks and the liability of unlocking by unauthorized form and the liability of unlocking by unauthorized of key being required, as well as the special curved to the lock may be used, and may be operate from and an large and any be used, and may be operate form and and a large sale after its excellent features become recognized.

DEATHER LINE BELITING.—One of the objects of interest at the Mechanics' Fair recently held in Boston was some self adjusting leather link in Boston was some self adjusting leather link obting, made by Mr. Chas. L. Ireson of 97 High street. The links composing this belts are treet. The links composing this belts are provided with holes requisite for the fastening of Trivets.

They are put together in a manner similar to they are put together in a manner similar to hely are the distribution of the links. Two longitaring the links of the belt to conform to the crown of the links belt the sense of Trispaper over which it runs. It is claimed that these belts convey and deliver power with absolute over which it runs. It is claimed that these belts convey and deliver power with absolute over which it runs. It is claimed that these links are also and with much less belt tension than it necessary with ordinary belts. A corresponding decrease of trictional resistance of responding decreases of trictional resistance of the set is and to be obtained.

A New Stern-Making Process.—A new process for the manufacture of steel, which is best features of the Bessemer and SiemensMartin methods, and to eliminate their defects, in tensile strength and ductility.

wice the length, in Brazil, made in 40 years, But it is in the low lands bordering rivers that the Bood artist finds the plastic material bast the Bood artist finds the plastic material bast way be remolded with each passing season, With high water the streams rapidly wear into earthy banks, commencing new bends or cutting off old ones and even opening new channels. Hos is off off chapte, The great and turbulent Hosmy. Hot discharge, The great and turbulent Hosmy. Hot discharge, the dearthy 300 miles north to the Gulf of Pechele, nearly 300 miles north to the Gulf of Pechele, nearly 300 miles north old channel more than this distance from the old channel more than this distance from the coast. This is the last of many changes, back and forth, recorded by the Chinese during the past 3000 years.—Boston Jour. of Com.

he fadty ranogements of secontemporary that he extensions is working on a new schoe for the expression of these, and he assers that in the congrues and of the way with the congrues specified in the congrue of the con INCANDESCENCE.—The word or term "incandescence," now so frequently used, has a meaning not of commonty understood, though seient ing not commonty understood, though seient the commonty understood, though seient ing not commonty understood, though seient the glowing whiteness of a body caused by intense heat. The little glass bulls, remarked a writer on the subject, with their boile not not attent are as about the latter are easily and prilliant horseshoe of glowing diekering gas jet, but the facts shout the latter are easily and generally known, while the electric lamp is not culties of gas are rendered. Both, however, procules; the blue portion of every gas alame less of gas are rendered incandescent by the molecules; the blue portion of every gas alame is where comes the heat which keeps the rest in a state of incandescence. The simple difference of incandescence of incandescence and diament to a condition of incandescence and diament to a condition of incandescence and produces light.

A New Use sond Electrician, Alex were Electrician of a condition of incandescence and produces light. A NEW USE FOR ELECTRICITY. - An enthusi-

deal."

TELEGRAPHING BETWEEN MOVING TRAINS.—
It seemed that a good-sized stride in telegraphy
had been made when telegraphing from moving
railway trains was established. But now that
passengers are to be provided with facilities for
using the telegraph to communicate between
using the telegraph to communicate between
using the telegraph to communicate between
to east for in this respect. What with drawing
to cast for in this respect. What with drawing
to salt with fuxurious appointments and esteping cars,
all with Inxurious appointments and excellent
ast comfort is concerned, to living altogether on
the road. There is not much objection, so far
the road. There is not much objection, so far
the road. There is not much objection, so far
as comfort is concerned, to living altogether on
became a race of nomads. Saye this enthusiset: "II have sufficient dorse actions each title in the five me at the free plugs, I will do sway with the use of the steam fire engines entirely, and in their places I will have convenient points, say in the near vicinity of these boxes will contain an electric apparatus, which will contain the storage vaults from central, powerful dynamos. By this power I will contain the storage vaults from central, powerful dynamos. By this power I will contain the contain an electric apparatus, to cause the force of the water to aid the dynamo force, and thus he enclass the aid the dynamo contain the force of the water the action of the occase the core of the water is not the action of the occase the order of the water is not the action of the occase the order of the water is not be necessary with the occase outlay to referm fire engines, and thus save a large sum annually, to say nothing of the original like the order of the order or

A CHILLED COPPER SPEAR-HEAD FOUND—
Oldboun county, Mich., owns the very mesdow Calboun county, Mich., owns the very mesdow wherein the battle was fought which gives the creek its name. The soil is still rich with a strow-heads, stone tomahawks and other implements of ancient American warfare. He coulty he found a copper spear-head six and a balf inches long and over one inch wide, the metal of which had been childed until it will must still be the county of the count steel. It is regarded as quite valuable.

ANATOMICAL AENOEMALITIES.—Among many abnormalities illustrating a recent paper before abnormalities illustrating a recent paper before fibe. Liverpool Biological Society, one of the most interesting was a human heart, the owner of which had managed to exist for 60 years in epite of an odd malformation which theoretically school dhave prevented the action of the heart, but did not, owing to an abnormal modification. In the discussion following was mentioned the case of a person in whom the abnormality was found of seven muscles peculiar to the aps.

Our ow Trouble Wares.—The Nautical Society of Hamburg has offered a prize of 500 marks for the best essay on the subject of Amburg he see by the use of oil. As calming the sea by the use of oil. As effect of oil made up to the present time is required, also a criticism of the apparatus used thus far, and especially complete directions for its use by large steamers and sailing vessels. effect upon the presence.

THE TAMGIBLE IN ELECTRICITY,—Among the large number of street-railway managers who are looked by the corticity with more or desa hope to electricity are looked so the corticity with more or gest shope to electricity expressed a desire for something tangible in the appropriate or guarantees of performance. This is now soundsantly forthcoming.

The electric railway is ready for the marketorurer as and will be guaranteed by the manufacturer as the will of the manufacturer as the will be guaranteed by the perfect as a great desonous y of performing is as encertainty and economy of performing is as encertainty and electricis profits and the better age.

In its main leatures electric street electricis, and the better appearance in the very near the trief as old every day for standard. That the trief as old every day for standard. That the trief sold every day for standard encloses are ure than in various electricity, and are destined wire than will be made in the very near lutter. More railroads are successfully and fact, horse railroads are successfully and the bower railroads are successfully as the present time without some foreholding as to the present time without some foreholding as to the wisdom of the power used or the intention of when the prover used or the intention of when the prover used or the intention of when the trief sections are successfully.

The standard is successfully were the street successfully and the successfully and the successfully and the successfully are successfully and the successfully and the successfully are successfully as the section of the power used or the successfully.

THE LARGEST ELECTRIC LIGHT IN

Would have been placed in the Sydney (Australia) lighthouse. It has a power of 180,000 candles, and may be seen from ships 50 miles out at seas. The next largest is the Palais d'Industrie, and has a power of 150,000 candles. The largest light in America is 24,000 candles. The largest light in America is 24,000 candles.

WORK OF MATURE'S SCULTOR. We are accousing the water accousing the water account of the water

Rainfall at Sacramento.

It is also a somewhat singular fact that Penn-sylvania potroleum, which was the first to be developed, is superior to any that has been developed elsewhere. Compared with the oils produced in Northwestern Ohio, Canada or Reussia, the Pennsylvania article is far superior. This also suggests the facts that Pennsylvania roles and oas have the early is and it is doubting to the court in the object of the decident to the Cornwall, while as to the uproariousness of her grantly, while as to the uproariousness of her grantly is done of the cornwalls, while as to the uproariousness of her grantle of the cornwalls, while as to the uproariousness of her grantle of the cornwalls, while as to the uproariousness of her grantle of the cornwalls, while as to the uproariousness of her grantle of the cornwalls, while as to the uproariousness of her grantle of the cornwalls, while as the uproariousness of her grantle of the cornwalls, while as the uproariousness of her grantle of the order of the order of the cornwalls, while as the upper order of the order or

a ed ot biss site. Whet is said to be a found the stand of other and and other and and a side of the stand of a side of the stand subsequently. The stand subsequently is stirred in, and subsequently of the stand of the standard of the st

TO TAKE THE "SMELL" FROM BLANKETS.—
Will you us kind enough to let us know it there
is anything that will take the smell out of a
woolen blanket after it is finished? We are
worken some all-wool blankets and use lard oil,
which leaves a smell after it. If there is anything that will take it out, will you kindly inform us?

OAST-IRON PULLEYS may be lagged with least-leave the use of rivets, by first brushing over the surface with scotic soid, which will quickly rust it sand give a rough surface; when attach the leasther to the face of the pulley with composed of one pound of fish glue and one-half pound of common glue.

Los Anderres.—It is said that the full name of Los Angeles is Pueblo de la Rejna de los Angeles, which means, in English, Town of the Queen of Angels. A Grass Brozrend des dess made at a Bir-miegdam, England, tactory for a Calcutta mill-ionaire. It is of solid glass, the legs, rails, etc., being richly cut. The King of Burmah also das

"GAS HAMERS" are being introduced into England, and it seems are making considerable beadway in competition with the steam ham-mer.

"The Krely Moror," still drage its slow length along. It is eaid that efforts are being made to "to on" it in England.

## GOOD MEALTH,

Monntain-Olimbing Healthful.

The Value of Pure Air.

The Value of Industriang and invigorating and invigorating attentioning, its well recognized, yet it would seem took to be superfluous to examine a little more closely this most precious of remedies, which, by the residence in a healthful locality, by the relief it gives from the earse of business, combined with residence in a healthful locality, a control of pure air, and drinking of pure water, sately leads to a serie of business of pure water, and drinking of pure water, and drinking of pure air, and drinking of pure water, and drinking of pure water, and drinking of pure air, and drinking of pure water, leads to a performance of the condent of pure water, and drinking of pure air, and drinking of pure air, and drinking to professes and sleep the call in the dark.

According to Professors Sennetor and Fluegge, but as the classes of an ender innoctory conding to professor and research to be seen to soil can render innoctory pure at its able, probably by means regards the disease germs received into the old—the windows in almost over the oxygen of combrastion, to render more or less innocuble to the disease germs received into the blood—of combrastion, to render more or less innocuble to the disease germs received into the blood—of the west of combrastion, to render more or less innocuble. A lavorite experiment of ming the less of serving in the distance of saw any but favorable one from which I never saw any of cours and drink the windows in almost every none in my lead of the west diseases at distance of saw any but favorable one from which I never saw any in the same of condenses of one to my of cours of cours of cours of cours of cours of cours was, in the every precartion was observed to prevent and every precartion was one exposed. The Value of Pure Air.

way.

Way.

Te is wall known that not every one exposed to way.

Ye is way.

Ye is way.

Ye is a contagious disease acquires that disease, and may it not be that disease, and may it to to be that those escape entirely or suffer from a mild form of the disease, who, after exposure, spend a consideration the incomplex that the denser of contagion depends also somewhat upon the position that the very consideration the couples when at the such heart of pure air. It is of somewhat upon the position that the visitor occupies when at the subsect of pure air. It is of especial efficacy in elevated regions, and its confirmer accents, and the heart secents, and its he puts forth in the accent. The best incomplex secents, and the confirmer secents, and the best account. The best incomplex secents, and the puts forth in the accent. The best incomplex secents, and the confirmer are of the peat and restion the best secents of the feat and of muscular tone, especially fact of the heart and vessels; if the confirmer are of vitiality and other organs in the giands and other organs does not yield to an increased flow of blood in

USEFUL INFORMATION,

A MAILHOAD IN THE ARCTIC CIRCLE,—The building trom Lates on the Gulf of Bothnia, to Laidean, which is a fire of the Gulf of Bothnia, to Laidean, on the Morte east, is partly situated building from Laies on the Gulf of Bothnia, to the Morte circle, and is 1900 miles further and the Arctic circle, and is 1900 miles further on the Morte of the Control of 
RESTORING GOLD CHAINS.—Several methods are employed, according to the color desired and goodes so falloy. In all asses, a prelimitable and goodess of alloy. In all asses, and produces of alloy. In all asses, are prelimitable with a dust of subjects, two yellow gold, sake six parts of subjects, two copperas, one white vitriol, and one alum, peter, II 2-10 set-amonisc, II 12-10 set-amonisc, II 4-10 Koman peter, II 2-10 verdigris, well mixed, and moistened with west of the vitriol, alum, and bores, all and peters all moistened with west of the vitriol, alum, and borest, and set-amonisc, in the vitriol and peters are set-amonisc, in the verdigris, well mixed, and moistened with west of the verdigris, well moistened with west of the verdigris, well and peter and peters. To remain the commonisc of the verdigris and mixed. To use these, place part, all powdered and mixed. To use these, place well position begins to boil. Having suspended the position begins to boil. Having suspended the and allow it to remain there, work by a horse bair, insert it in the crucible, with a new long to remain the prince, will now and allow it to remain the will now the version of the series of boiling water. The color will now the organish and rinse, and allow it to remain the will now the organish and rinse, and allow it to remain the will now the organish and rinse, and allow it to remain the will now the organish and rinse, and allow it to remain the proving it shout the seven minutes or but in a vessel of boiling water. The color will now the organisher, and lay in boxwood dust.

To Cherry II Place.—Organished the viral of the remain of princes and or but.

To CRYSTALLIZE TAR PLATE, —Crystallized tin plate, and lay in boxwood dust.

To CRYSTALLIZE TAR PLATE, —Crystallized tin plate has a variegated primrose appearance, produced upon the surface of it in plate by approduced upon the surface of it in plate by approduced upon the acts of seconds; then washing quer. The figures are more or less directable.

The figures are more or less diversified, allibrium of the scid. Place the tin plate, self-plate and realisting the self-plate of a quasitotis and rub its scid. Place the tin plate, allibrium of the scid. Plate the plate of the scid. Plate and two of distribution, when the cotton, taking care not to vub off the thoroughly cotton, taking care not to vub off the flate of cotton, taking care not to vub off the flate of the scid with a status, otherwise it loses its lusted in the taking care not to vub off the distribution, whole surface is not plunged at once in cold water, but is gartially colded with a lacquer varnish, otherwise it loses its luster in the spin lake flate of the status of the scole with large and small figures. In the scid with large and small figures is limitar results will be one the crystallization will be finely variegated with large and small figures. Similar results will be one the old water on it, the crystallization will be finely variegated with large and small figures. Similar results will be on the large of the blowing the state.—Spons' Workshop Receipts.

R litturing Sore.—Take 50 pounds of purespectives of purespective of the search of the search of purespective of the search 
A FULLING SOAF.—Take 50 pounds of pure caustic potests and add to it about 90 pounds of a caustic potests and add to it about 90 pounds of a caustic potests with discoles immediately. Allow this to cool a fact a few min-his ye, with constant stirring for a few min-this 49c, with constant stirring for 20 gallons of this 49c, with constant stirring and process of miles of the whole being brought to a temperature of 90 degrees F. Then leave this mixture in a warm room for two days, well wrapped up to keep in the heat caused by the gredual process of sponification and combination which for a day or two more in a warm place, when the seep in the search of the series of the process of sponification and combination which the search of the se

Pici Iron for Los Angeries.—To this colester of the central of the peed two carloads of foundry by were recently abin peed two carloads of foundry by it from the firm of the firm of the firm of the price of the iron. There are at least two questions that suggest thenuselves, says as two questions that suggest thenuselves, says as a payed to the first, what could such a heavy liver, what could such a constant of the first, what could such a peed to the first of t

PERMINIANIA OIL THE BEST.—Analysis and flues from soot by American petroleum oils are much superior to American petroleum oils are much superior to an oils a peace of zinc on a bed of hot coals.

0.000 0.680 0.210 2.210

0.080 0.020 0.020 11.340 5.760 1884 0.600 2.010 0.0001

of

1.120 6.280 0.940 2.530 2.530 8p'kle 0.000 np'kle

| 1835 | 1886 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 1890 | 0.970 0.970 0.610 0.440 annual Ą 1883 2.210 1.340 0.730 0.0730 0.000 0.000 ₽. the 1881 0.300 0.483 1.720 1832 1.890 2.400 3.780 0.350 0.350  $an\dot{a}$ 1881 4.985 4.985 1.217 1.217 1.600 0.000 0.000 0.000 1880 0.000 0.000 802 00 1.519 1.763 1.763 1.763 1.763 1.4.283 0.000 0.000 0.000 758 3.765 3.240 3.240 1.318 1.318 1.318 1.318 1.30 3p'kle .290 .385 .415 1878 8.229 8.229 1.176 0.00 0.00 0.000 1.449 I 0.00 0.690 1.120 1877 1.40° 0.560 0.640 0.000 0.000 0.000 1876 0'kle 3.320 0.320 1876 4.790 4.160 1.090 0.190 0.000 0.020 0.000 0.440 6.206 5.525 1876 8 705 0.550 0.002 0.002 0.000 0.000 0.000 2.259 3.801 0.440 1874 5.200 1.856 8.050 0.370 0.002 0.001 0.000 0.310 0.310 0.009 Š. 0.002 1878 1.230 0.551 0.512 0.015 0.015 p'kle 1872 F. Dec. 1872 4.040 4.740 0.610 0.280 0.025 0.000 0.000 0.001 0.210 1.220 0.990 2.075 1.819 0.690 1.454 0.756 0.000 0.020 0.920 0.971 1870 1.371 1.371 2.120 0.270 0.270 0.270 0.001 0.001 1,962 1,962 1869 4.790 3.630 2.942 1.240 0.648 0.008 0.000 0.000 0.000 0.774 2.612 1868 6.036 3.147 4.348 2.306 0.270 0.000 0.000 0.000 0.000 3.806 2.850 3.426 0.001 0.426 0.511 3,450 7,104 7,104 1,010 1,805 0,000 0,000 0,000 and 1865 0.080 0.480 2.427 0.364 7.699 2.010 2.018 0.476 0.100 0.018 1,865 0,712 0,481 1,370 0,000 0,000 0,000 0,000 0,000 ¥ 1.077 1.077 1.077 1.080 1.080 1.080 0.042 0.087 0.085 0.085 0.085 0.000 1.733 2.751 2.751 2.751 2.751 0.355 0.000 0.000 0.000 0.000 0.355 0.005 2.327 late 0.000 0.000 2.170 8.637 1862 5,036 5,036 1,260 0,821 0,001 0,000 0,006 1861 2.668 3.320 0.475 0.590 0.000 0.000 0.000 0.063 0.914 0.181 1.282 0.025 0.000 6.485 1.834 2.310 0.331 0.331 0.331 0.331 0.031 0.000 0.000 858 3.010 0.147 4.329 1,037 0,090 0,090 0,090 0,090 0,090 0,090 1857 0.000 0.655 2.406 2.441 2.441 2.461 2.461 1.214 0.203 0.000 0.000 0.000 1.875 1.875 1.875 1.875 0.675 0.676 0.686 0.600 0.600 1355 p.vso 0.000 0.750 2.000 1866 2.670 8.460 1.150 0.010 0.000 0.000 1854 1,010 0,650 1,150 0.000 0.000 1.500 1.540 3,250 3,250 3,250 1,500 0,210 0,210 0,210 0,000 0,000 0,003 1853 3,400 2,400 2,400 1,450 0,001 0,400 0,400 0,400 0,400 1,000 0,150 2,140 7,070 1881 0.650 0.850 0.850 0.690 0.000 0.000 0.000 0.000 0.000 p.kle 1849 1.250 2.250 2.250 1830 1, 500 1, 500 1, 250 1, 2 January ...
F. bruary ...
March ...
April ...
Jan.
Jan. We present the tabular etatement of rainfall at Sacramento for the hat 38 years. It is very valuable, not merely to those who live in the great valley of California, but a le silve the general athders of meteorology, as it affords the means of comparing the rainfalls in the interior and upon the coast as recorded in this city. We are nucler obligations to Sergeant Barwick of the U. S. Signal Service for his kindness in furnishing revised figures to date.

BLINDWESS INCREASING.—It is stated on good authority that binduces in the United States is increasing. While the population during the ten years from 1870 to 1880 increased at the rate of 30 per cent, blindness increased over 140 per cent. FINGER-WAILS AND TEMPERANEUT.—The fingernails, like every other part of the physical
organization, possess temperamental evidences.
Their length, breadth, thickness, toughness,
constitutional properties. The coarse type of
the motive has strong, somewhat irregular
constitutional properties, The coarse type of
the motive has strong, somewhat irregular
transent are associated rather broad, rounded
ament are associated rather broad, rounded
anils that are of soft consistency. The mental
nails, yet symmetrical. A compliant angular
mental and vital has the finest showing of the
demperament has the finest showing of the
actual control of the compliant of the control of the con

A COMMON AFFECTION.—Not infrequently nurses, by reason of negleco or ignorance, fail to wash the heads of infants properly during the wash the heads of infants properly during the wash the heads of infants properly during the which should have been removed goes on accumulating, dust and dirt are intermingled, it grows discolored and thicker. It eventually the name is not a cruet, which interferes with the natural action of the oild parties, and nurse according in the consent of the soilor is decomposed. This ablaced secretion is it their product by the action of the secret of the disease known as conservable in the consent in washing, new-born children is the consent in washing new-born children is the consent in the consent in washing new-born children is followed by very troublesome results.

HEART DISEASE AND INDIGERTION,—There is it is doubt of the truth of the statement of a New York physician that half the cases of so and a fact disease are only indigeablen, and make a tree scared to death than die any other way. Dyspepsis causes a pine in the other tree in a resease the part of these that he heart be the tree in the tree to give up tea, outlets of these things—sat however head and a present of the care of the case of

Poisoning by Alcohol.—Cases of poisoning by alcohol, which prove fatal, most commonly occur among children, on whom it seeks as a powerful natrobite. The symptoms are brief, but wild—excitement, then stupor, delinium and profound insensibility, which not infrequently terminates in desth. For treatment, it should be held in the bread placed under a fancet or mans and the bread placed under a fancet or pump, and a douching of cold water be persistent and the bread placed with a persistent of mustard or ipecae should be given, and followed by the aromatic spirit of amonia and followed by the aromatic spirit of amonia in doses adjusted to the age of the child. It a physician is not called, the druggiet from whom the amonia is obtained will advise them whom the amonia is obtained will advise what quantity to give.

Skiin Diskass.—The laity believe, as a rule, that cutants.—The laity believe, as a rule, that cutancous diseases result from "blod", blod," the impurities of which find exit through the skin, and in so doing take the thin come of an eruption. Obsequently it is harmful to remove them. Obsequently it is harmful to sealers our of a disease of the sealer cut of a disease of the sealer of the obsequence, in their opinion, might be diseastoned by the "drive out" and internal organ. Mother, could be more absurd, for it is absorbantly in the sense to either "drive into "or "drive out" are sind incease. The blood incease as peonitar to this organ as to any other, entirely localized, depending upon other, entirely localized, entirely entirely localized entirely entir

does not rest and veine; if the thinded blood does not become thicker and more rich in albumen; if the accountabring carbonic soid is not soid a not become thicker and more repelled by a more plential apply of cyggen; if the let deposited in the body is not cyggen; if the let deposited in the body is not more repidly oxidized; and if the let deposited is the body is not repelled to coroning to Jacobi. Join, Olerla and other authorities, Loin, Olerla and other authorities, Loin, Olerla and other authorities, not more generally by mount-more certainly and more generally by mount-in the certainly and more generally by mounties, Loin, Olerla and other authorities, in many other way whetever, it is necessary to have a very bing arranged and it is necessary to have a very bing arranged and the otherin preliminary defails. Hegulation to the established as to the gradual increase in the extent of the daily ascents, the protection of the established as to the gradual increase in the extent of the daily ascents, the protection of the fertain and a fine formation of the protection of the reed, legs and nates against the protection of the formation of the necessary defails and the formation of bisters, the protection of the neces, legs and nates against the mountain up which the selection of the mountain up which the selection of the neces, and finelly the selection of the mountain up which the secent is to be made of the formation which we have the consideration.—L. Borrken, M. D., in M. Y. Y.

on Piety Hill, this city, A crushing made this week paid about \$1.23 ton?

THE CREERAL CRANT,—North San Juan Times, The cause for the ton the fact that the fact that the contractor who sereed to furnish will remains idia.

The cause for it is to be found in the fact that the contractor who sereed to furnish will be seared the same along. The tramway is completed, and when the same along. The tramway is completed, and when the rope and cars arrive the mill will be estarted up, as a large quantity of rich rock; is captured to be put through the mortars.

Good Proserers Ahera,—"Armacraph, Dec. III. Suppleted, and when the rope and cars arrive the mill pulled to shut down the machinery and quit work sale to the cold for the cold when the condity gravel, the value of which could not be received by reason of the pump having to stop. Work had progressed unintermptedly through the productive mill however, be actively recumed at as early a date as search and had not be been developed. Work set in at least sax weeks earlier than rusul a valuable productive mile and not this severe obstructive weather brook and had use the search of significant and had not be severe obstructive weather as a possible, and under better auspices than evel. Work as possible, and under better auspices than evel. Work will, however, be actively recumed at as early a date as possible, and under better auspices than evel. Work will, however, be actively recumed at a search as a search as the search as a search as the footy Gien mine of the man better and the search of yesterday with part of the new plumger pump for the Rocky Gien mine. The load was left here and for-time foots with part of the new plumger pump for the Rocky Gien mine. The load was left here and tor-

A Good Little Mine.—Mr. Bonney is getting good results from the quarts ledge in his bouse lot on Pleity Hill, this city, A crushing made this week paid about \$12 a ton.

THE NEVADA COUNTY MINE.—The last monthly ofeanup at the Nevada County mine in this city was cleanup at the Nevada County mine in this city was from a crushing of as to not of one of one properties of stand star and star and star and star and star and star and star of one one of the mine are very new ground. The prospects of the mine are very good.

GOOD-LOOKING ORE.—Tyanserigh, Dec. 10: S. M. Shurtleff brought down from Washington town actions abilip this weeks some specimens of ore from actions mines there. The Washington has an eight-foot mines there, the Bluebell's is 14 feet thick. The ore fadge, and the Bluebell's is 14 feet thick. The ore in both is of a very satisfactory grade, the Bluebell in both is of a very satisfactory grade, the Bluebell about grade, the Bluebell and the satisfactory actions and the satisfactory actions and the satisfactory with the New Alvest Inches and the satisfactory was a satisfactory and the satisfactory was a satisfactory and the satisfactory and satis

"ARASTRA.—An arastra run by steam-power is running on gold ore at Old Coso. J. C. Eddy is owner of mine and machinery.

at little expense, and it is claimed to be superior by experienced miners to the celebrated Cart mine.

They are passed from a trip to Paramint. He visited some of the mines belonging to the Surprise visited some of the mines belonging to the Surprise to seed to celebrated from the furnishment of the control of the Surprise from this mine is opened by two tunnels, each already well mine is opened by two tunnels, each already well with the fact of the control of the c

#### Inyo.

A RICH DISCOVERY.—Oroville Register, Dec, 8; Samuel N. Ellon, an old miner and prospector, has backed what promises to be a very rich mine, in Golden Summit Mining district, 60 miles mine, in Golden Summit Mining district, 60 miles fine, in Golden Summit Mining district, 60 miles ships, and the Chappers! House, 10wn. Sping, 5, east, section 29. It is an old gravel deposity of which there are a number in this district. He beer some \$500 spent on the prospect, but next beer some \$500 spent on the prospect, but next beer some \$500 spent on the prospect, but next beer some \$500 spent on the prospect, but next beer some \$500 spent on the prospect, but next sping they mire alice \$50 a day per mas. The mine is owned by Thos. B. Jones & Co., can be opened so where the prospect of 
CALIFORNIA.

The following is mostly condensed from journals publishe in the interior, in proximity to the mines mentioned.

HAV FORK QUARTZ.—Journal, Dec. 10: From MA. FORK QUARTZ.—Journal, Dec. 10: Frok quartz Ale. C. C. Shattuck we learn that Hay Fork quartz progressers and the outlook is good for permanent and good-paying mines. The Magupon it, they are still following: the pay lead and upon it, they are exill following the pay lead and have a large body of stoping ground in sight. The owners of the Cyclone are taking out good ore and plenty of it; they are taking out suificient good ore

GOULD AND CURRY.—250 level—At a point so feet south of the west crosscut tay feet. The stee is in vein prophyry and streaks of quartz. 425 level—An upwaise has been carried up 35 feet, following a streak of ore one

GRAND PRIZE.—300-foot level; South crossout GRAND PRIZE.—300-foot level; Cotal length, Goo feet, The face of the south drift has been advanced as feet, total length 150 feet; north drift exitended as driven in a northeasterly direction to make a condition with the south crossout for air—the vein nection with the south crossout for air—the vein

and Dewilf, 4 tons.

Tuscarora District.

Mevada Queen—Times-Keview, Dec. 9: The north drift on the 100-1001 level has been advanced as of eter and timbered. The intermediate drift from witze below 200-1001 level has been extended 4 feet, to have a speperance of coming into ore, as it tooker some better than when last reported. Munning some better than when last reported. Munning the ore in morth, the drift has heen extended y feet, the ore in face being very high grade. The stopes above this drift all look well. Battery pulp average assay for the week, Isyak, Muli is muning all right, but will have to shu down to elean boilers, which but well have to shu down to elean boilers, which will have to shu down to elean boilers, which will be say that the say the say that the say the say that 
ORE SHIPMENTS.—Sentinel, Dec. 10: During the past week ore shipments were made from the past week ore shipments were made from the infes of the district as follows. To the Kleinmond mine, 15 fons; Dunmend fine district set of lows, 15 fons; Dunmers, 10 ons; Burgenetta, 24 fons; Burgenetta, 24 fons; Burgenetta, 24 fons; Burgenet M. Robinsont, 42 fons; Burdertel Lee, 7 fons; District and Belmont, 42 fons; Burgenet M. Robinsont, 5 fons; Burgenet M. Robinsont, 5 fons; Duns; General Lee, 7 fons; Avon, 10 fons; Seventy-six, 5 fons; Republic, 4 fons; and Dewitt, 4 fons; Tuscarora District.

Eureka District.

MOUNT DIABLO.—Walkey Lake Bulletin, Dec.

Will begin timbering the shoot in a few days for the ninth level. The south crosscut from the east drift on the 6th level is in 156 feet. The west stope on the 4th level is fin 156 feet. The west drift on this level is acts feet. The west dripe on this level is acts feet. The west dripe on the 4th level is giving consider the second winze on the 4th level is giving consider able 550 quarts; we are getting some ore of fine wired between the 3th and 150 feet of 650 ore, winze. The lowest intermediate stope between the winze. The lowest intermediate stope between the first first and second levels shows four feet of \$60 ore, The coult orescent from the east drift on the first level is in 101 feet.

Scorpton,—On the 300 level the north drift has been advanced as feet, and the south drift on the same level has been actended to feet.

ALTA.—Mill running steadily on ore extracted to see string seed so seed to see the seed.

ALTA.—Mill surprise steadily on ore extracted seed.

UTAH.—472 level—The north drift from the west end of the west crossout No. of has been extended 5s leet, total bength, tot feet. The tormation in the face is porphyry, clay and quarts.

POTOSI.—The usual work is being done in the upper levels, and extracting ore for the mill, all the bins of which are now full.

next week.

Between Tep Bell-CHER,—The 1300 level raise is a Secure for the care in good ore, and page 30 feet, from which point they have drifted as the face is in good ore, and there is no change in the character of the ore in the face traise.

MONTENUM.—COMSOLIDATED.—Are grading itself to the ore in the cases of the ore in the page out to the case of the control of the page out to a start new tunnel from. New blacksmith shop and necessary buildings are in processory belong the page of the p

Within about 100 refer of the Burdon south me, OEST.—In the coith shaft have cut the clibson past week they have such close; and cut into the past week they have such lower and cut into the ledge out strike yet mades in the mine.

WEST COM, VIRGINIA AND CALIFORMIA.—Have commenced sinking the new shaft, the road to which the sibathouse and blacksmith shop will be finished assi yet lower and blacksmith shop will be finished should not such week.

per levels for the mill.

YELLOW JACKET,—Are shipping 300 tons of ore daily to the brunswide and Satinage mills. The daily to the brunswide and Satinage mills. The ones from the troo, 1200 and 400 levels.

There is one to the mills to bridge over that the mine down for 48 hours in order to put in a new gear wheel and a new pin wheel. There is no prospecting being foone at present. They will start the mills to bridge over that time in a new gear wheel and a new pin wheel. There is no being the present of the face is in porphyry, with state time to Gour Persent in porphyry, with state time to how grade quartz brough it. The 500 level consecut has been removed distance of 428 feet, and a west croscout was started distance of 428 feet, and a west croscout was started distance of 428 feet, and a west croscout was started distance of 428 feet, and a west croscout was started distance of 428 feet, and a west croscout was started distance of 428 feet, and a west croscout was started to the mill appear to be bas been removed to the mill 40 tons of ote.

EXCHEQUER,—Are completed repairs with the lower tunned to the mill 40 tons of ote.

EXCHEQUER,—Are completed to the mill 40 tons of ote.

The north line of the Alpha on the 128 level.

For other or of the Alpha on the 128 level.

The north line of the Bullion couth line, on the cast drift shout of the bull the sast level is only off the and the east drift shout of the Bullion south line, one of the Bullion south line.

OEST,—In the north labelt have cut he Gibson ledge four times, it is 45 feet wide. During the lower times, it is 45 feet wide. During the lower in the Cibson ledge of the Bullion south line.

CHOLLAR,—The 550 level west drift will be considered with the Sharon shaft by Monday. The distance from shaft to shaft is 614 feet. The west drift on the 650 level is in aso feet and the norther west steried drift on five same level is in soo feet. The incline has been sunk and timbened asoo feet. The incline has been sunk and timbened asoo feet below the 950 level. Are extracting ore in the upper levels for the mill.

YELLOW JAKET,—Are shipping 300 tons of ore

-Usual progress reported in the drifts.

Columbus District.

THE COULTION.—VIRGING WRICE WHICH THEY COULD HOLD HOLD TO THE WADNA.

MEADOD DISCUSSION. THEY THEY THEY CONTROLLED THE WASH THEY CAN THEY CONTROLLED THE WASH THEY CONTROLLED THE WASH THEY CAN TH

Young America mine as a result of last month's run.

The lower turnel at the San Luis mine is mow in go feet

The Wisconsia and the Wisconsia Reseaser, Dec. 10:

The Wisconsia and the Wisconsia Reseaser, Dec. 10:

The Wisconsia and the Wisconsia Reseaser, bear to be and the Wisconsia Reseaser, bear to shall be dead to the state of the state of the state of the band to the Bald Mountain mest the Ruby mine, and pay which is the school of the Bald Mountain mest the Ruby line, and pay of the bear 
CLEANUR.—Sierra Tathure, Dec. 9: Twenty-nine thousand dollars in bullion was cleaned up at the Young America mine as a result of fast month's run. The lower tunnel at the San Luis mine is now in 90 Feet.

Shasts.

Ono.—Con, Shasts. Courier, Dec. 10: Neil Henry, who has been superintending the work on the Pound Cake mine, reports everything in a very promising condition in the Pound Cake mine—the deposal is quite large and splenmine—the deposal is quite large and splenmine and mill, formerly the property of Grant & Titus. They are at present property of Grant & Titus. They are at present property of Grant & Titus. They are at present property of Grant & Titus. They are at present property of Grant & Titus. They are at present property of Grant & Titus. They are at present the high size that the standard of Smarth & Titus. They are a present that the High size of the same and are milling the same. Mr. Loomis, of the same mining field, the same mining field, has found some very good ore in their south drift, and are raising up on it.

Shasta.

PURIOUS. We have been accorded from the first has made in the first hard.

PETROLEUM.—Los Angeles Triòuns, Dec. 3: The oil county of Ventura county is booming. The Seepe oil Company at The Tree depends a sea county is been a sea county in the Black Jack section of Tarwell number to in the Black Jack section of Tarwell number to in the Black Jack section of Tarwell number to in the Black Jack section of Tarmars, given the cashig. It is depth of 500 feet. At Sants Pauls, in the Sails in a ta depth of 500 feet. At Sants Pauls, in the Sails in the sail marsh, giving about 300 feet. At Sants Pauls, in the Sails in the Sails.

In Bless Canyon, Camulos District, T. H. Rhodes and S. Bickner are building a new rig to start in the Sails.

In Bless Canyon, Camulos District, T. H. Rhodes and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails are sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new rig to start in the Sails and S. Bickner are building a new right of Sails and S. Bickner are building a new right of Sails and S. Bickner are building a new right of Sails and S. Bickner are building a new right of Sails and 
pins his distin to the value and permanency of his inby a lycethrents.

New Superintendenty—Mit. T. Houghton,
Verlments.

New Superintendenty—Mit. T. Houghton,
Verlmenty foreman in the Brown Bear mine at Jeactendent. Mit. Henry Martin, one of the owners
tendent. Mit. Henry Martin, one of the owners
and for the past two years superintendent, leaves for
and for the past two years superintendent, leaves for
and for the past two years superintendent, leaves for
and for the past two years superintendent, leaves for
and for the past two years superintendent in San FranBie Basin Mine.—Union Democrat,
This great quarta-mining proposition is yet in its
infancy, norwithstanding shout good bas altered
been expended in its development. It is in able
fefficient manager and foreman, Frank McCann.
The shaft is down to a considerable depth, and
boxled after by Superintendent Hamilton and its
fefficient manager and foreman, Frank McCann.
The shaft is down to a considerable depth, and
which is about two feet in width. They have passed
confident that there is already a sufficient quantity
which show very rich ore. These rich veins run
parallel with deach other and are all embreced in a
width of about you feet. The managers feel quite
through quite a number of salveady a sufficient quantity
of rich ore in sight to repay the company for the
parallel with the shout two feet in width. They have passed
through quite a number of salveady a sufficient quantity
of rich ore in sight to repay the company for the
parallel with seate informed that this mining too the main
the width of yoo feet. The work going or stone and the width of yoo feet. The work going to shows seven or eight different gold-bearing veins
shows seven or eight different gold-bearing veins
the width of yoo feet. The work going or stone with the width of yoo feet. The work going win the width of yoo feet. The work going or stone with the width of you go to deet. The work going or sing to salve with the width of yoo get. The work going or sing to see the work of the

ore to time the mingen and day, the min is a Hamington, and course a sons of rock a day, the mindington, and crushes 8 tons of rock a day, the mington and considered to the construction of the construction though it has crushed a form on the mill negative and everlements of the milling value. The wast crossout has though it has crushed to form it is found to be more profitable, however, not to run the mill work to the milling to make the condition of the man and crushes a form of the man and crushes are defected to form the milling to make the condition of the man and crushed the man and crushed the man and the m

RICHARD RITCHIE and John Madrid are negotiating for a five-stamp mill for their nine at Tuttletown, which they have been developing the last five with the state of the state

warded to the mines on sleighs, the snow being too deep for wheels. At the Kocky Glen mine they will be begin shifting as soon as the rea of the pump gets there and is put in working order. The erecting of the new hoisting works at the Eric mine will be to operation again. Parson's custom mill be in operation again. Parson's custom mill he in operation again. Parson's custom mill fill be in operation again. Parson's custom mill Ridge mine is still running with a force of 30 men. Ridge mine is still running with a force of 30 men. The Blue Cloud Company have just made a clean per soon of the continue 
MINING BUMMARY.

MINING AND SCIENTIFIC PRESS.

STERLING.—Jacksonville Vitmer, Dec. 3: The Secting Aluming (°c. has annough water to enable their grains. From S. H. Cook of Applegate, we can the strain that two strangers who have been prospecting diants about a to the state of the strain part and the strangers who have been prospecting quarts abowing free gold in abundance. The late state showing free gold in abundance. The late state of the state of t

day and appears to be imaking a success of it. He has begun abipping bullion.

Good Reports from Bindeham.—Our at Bing-has the segun abipping bullion.

Good Reports from Bindeham.—Our at Bing-ham the shuting of the shaft to a level too feet conference and the shaft of the shaft to a level too feet conference and the shaft of the

AT BINGHAM AND OPHIR—Salt Lake Tribune, Dec. 8: Our at Ophir, on Lion Hill, the Brim the Dec. 8: Our at Ophir, on Lion Hill, the Brishy, and Like of ore lately, and their property is looking much improved. P. P. P. Van Deusen, manager of the Gem mine at they get ophir, yan Deusen, manager of the Gem mine at Ophir, Van Deusen, manager of the Gem mine at Juping or easying \$1000 per ton. This strike is on the incline and native silver. Mr. Causey is making good and native silver. Mr. Causey is making good and native silver. Mr. Causey is maked a woweks. The follow the surface. The ore salt and a should make a work of the calculation of his smeller at Stockton, then shut down a few days not ore, and heaving made a strong come to get this of the Calcumet and Silver King, muth some other mines, started up again last Thursday and appears to be making a success of it. He has begun ahipping builton.

Good Repens to be making a success of it. He has begun ahipping builton.

55.000 shingles for the Mountain Key Mining Company for a gold-mill to be built at Pinos Altos. There is considerable attention being given to low-grade ores which were formerly agnored: this will ultimately add much wealth to districts where such mineral is properly handled.

COPORADO.

THE BENNET HOLOKANIA.—Rio Grande Republican; the content of a second elastrone and found the one content of a second elastrone and found the content of the DAKOTA.

SUNNYSIDE.—Black IIIIIs Pioneer, Dec, 8: John binging down with him a quantity of ore taken binging down with him a quantity of ore taken from the Bonnyside dode, bloonging to to receive the closely resemble, so a fember of the binging down with him a quantity of ore taken load, and assays from \$50 to \$50 per ton. Development of the binging down with him to the binging to himself, Sol before and Matt Plunkett. The cach, ore has been ments on the binnyside are as yet limited, consistent of the binney the mines of the binding and the binding strength of the claim. In each, ore has been waited by the binding strength of the consistent of the control of

CONTRACT.—Idaho Springs Metus, Dec, 9: A contract has been let to drive a drift soo feet west and too feet esset on the Lamartine. A confuse that a drop cool ere is again being encountered in the shalt, of other bonom of the shalt of other seed on the Lamartine. A confuse that do do been let to sink the shalt of other details of the shalt of other seed on the shalt of other seed of the shalt of the shall 
ARIZONA CAPPER.—Clifton Examiner, Dec. 7:
The Arizona Copper Co. has been running but one fulre need the peat week owing to a scarcity of coke, in the rocent strike of switchmen at Galveston. A quantity of fuel is now on the rocad, however, and is expected daily at Lordburg. The necessary shuting down of one turnace has proved 1stifter unfortunate in view of the prevailing high price of copurate of the coke arives, beet, but it is the intention of the management of bow in an exita turnace as soon as the coke arives, beet, but it is the intention of the present marker. Beet, and superintendent Conqueburg 1st making every which will serve to make up, it not to increase, the effort to take full advantage of the present marker, secretal and superintendent (Colqueburg 1st making every preseed into bricks a large quantity of furnace dust, preseed into bricks a large quantity of furnace dust, and superintendent 1st per cent of copper, which will be surface in the bricks at large quantity of furnace dust, out about 2 per cent of copper, which will be out about 7000 bricks weekly, or between 30 and 32 tons and 32 bricks weekly, or between 30 and 32 tons.

having been left (running north) 15 feet back from the face. The wince (No. 1) in this drift has been auther 16 eet, showing a good soil of vein, sversige assaying a good soil of vein, sversige and one stope carried along the top of the drift in the and one stope carried along the top of the drift to admit of the same ore specially staged to the drift to admit of the same ore superset or the drift to admit of the same ore being from 1 to 25% feet in admit of the same ore being from 1 to 25% feet in the same of the drift to assaying the same of the drift to assay of the drift of the same of the sam

STRIKE.—Butte Minne, Dec. 7: Messrs, Pete Conway, Dr. Holmes and S. Marchesseau are refeiving congressingly and so and S. Marchesseau are restring to the mountain Lion Tunnel, Horse caryon, strike in the Mountain Lion Tunnel, Horse caryon, strike in the Mountain Lion Tunnel, Horse caryon, countered on Firlds Aller Points and a server the face show up an average of 600 con the caryon for a server to face show up an average of 600 con the caryon ounces of silver to the too. The announcement by Lice Asin December 1 and 
NEW MEXICO.

THE CARBOKATE GROUP.—IMEX-Idaho, Dec. 10.

Old prospectors who have been identified with the have high expectations in regard to the Carbonate history of Leadville from the first year of 1tg Egowth history of Leadville from the first year of 1tg Frowth history of Leadville from the first year of 1tg Frowth history of Leadville from the series and the components of the Carbonate series of the Leadville from the winds and the continue and the continue and the continue developments for the coming season of series of the Leadville ores. It is very easily treated, as it carries all the requirements for fluxing. There are four or five lead, the extrager of the Leadville ores. It is very easily treated it carries all the requirements for fluxing. There are four or five leads, An offer of \$52,000 his expected. The will perhaps go too onnees silver and 65 per cent lead. The extrager of the continue of \$500 onnees silver and 65 per cent lead. The extrager on the content of \$500 onnees silver and 65 per cent lead. The extrager on the content of the spot, will perhaps go too onnees silver and 65 per cent lead. The extrager on the content of the spot, the content of the content of the spot, and the spot of the s

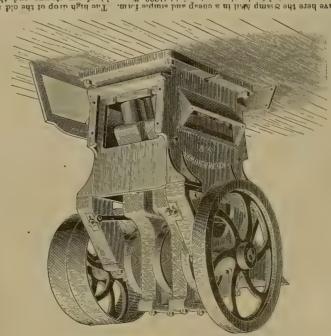
## ested there in mining. During the summer himels and partner, Fred tities, have been developing. In before any effort is made to take out ore: In before any effort is made to take out ore: In A HO. IDAHO.

Horseshoe Comet.—Title to this company's Galena property has been completed, by passing of deeds from the old Horseshoe  $C_{\rm o}$ . Supr. Donne has a large force employed in the mine, and pro-

The close of the claims of the condent work of the owners of the owners of the condent work of the condent of the claims of the condent of the claims of the condent of the claims of the condent of the condent of the claims of copper of the claim, the claims of the

ROCK CREEK.—Wather Mews, Dec. 9: The mines located under the flag of Her Majesty Queen Victoria on Rock retels, British Colimbie, are, thank to the energy and enterprise of cliticens of the Conting prominence and after the development in the future. A. McKenney, who returned from there recently and thinks as far as his locality is concerned, a sind thinks as far as his locality is concerned, a bright future is in store for a number who taxed, a bright future is in store for a number who taxed, a BRITISH COLUMBIA.

DOUBLE "ECONOMIC" STAMP MILL.



We have here the Scamp Mell in a cute, pand stuppe form. The bigh diop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the rapidity (300 strokes each per minute) with which they run. There are 4 shoes in each stamp, so that there are 4500 strokes of the shoes on the dies per minute. Less power is required than in that there are 4500 strokes of the smoont of work.

The Mortar has screens at both ends, giving ample discharge. There are no cams or tappped to wear or be adjusted. The stamps adjust themselves as the shoes wear.

AN AUTOMATIC ORE FEEDER

Goes with each Mill. We also have a suitable

Several Mills are now in the mines doing excellent work. The "Economic" is not only a mill for small mines, but we believe it is destined to supersent the old stand in mills of the table.

MEWOR & MUTAT

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc. 34 and 36 FREMONT STREET, SAN FRANCISCO, CAL.

# ABBINHSVA

MACHINERY. WOODWORKING J. A. PAY & CO.'S WOODWORKING encines. Williamson bros' hoisting SOLE AGENTS FOR

ATLAS ENGINE WORKS ENGINES AND BOILERS.

SOUTAL ENGINES.
PAYNE'S VERTICAL AND HORI-

San Francisco, Cal.

EMPIRE LAUMDRY MACHINERY, OLLO SITENT GAS ENGINES,

10DZON ENGINE GOVERNORS. SICKERING ENGINE GOVERNORS

LOES.

LOES INTECTORS AND ETEC-NATHAN AND DREYFUS OILERS. VAD MACHINERY,

H. W. JOHNS, ASEESTOS PACK-TYME YND BODEEK SYM MIFES' ING GO'S KUBBER GOODS. NEW YORK BELTING AND PACK-DISSTON'S CIRCULAR SAWS.

STURTEVANT BLOWERS AND EXHAUSTS. WEBBER CENTRIFUGAL PUMPS. BUAKES IMPROVED STEAM PEMENT & SON'S MACHINISTS CHINISLS, LOOFS' NEM HVAEN WVNNE,G CO',Z MV-

BRADLEY STEAM HAMMERS, MAŠSEY'S STEAM HAMMERS, SOHLENKER'S BOLT CUTTERS, TURBINE WATER WHEELS. BEVIOUS MITTING MUCHINES SHIMER MATCHER HEADS,

EERIN BVND SVM BLADES.

BICKLOKDS SOMEK DRIFTS'

Cor. Fremont and Mission Sts.,

HOLLOWAY FIRE EXTINGUISH-

XACHT ENGINES.

## ENCINES SUG BOILERS

FROM 2 TO 100 H. P., ALWAYS IN STOCK

MILL SUPPLIES AND LUBRICATING OILS.

IMPROVED This cut represents our PARKE, LACY & CO. PACIFIC COAST AGENTS, 96 Liberty St., New York. LIDGERWOOD M'F'G COMPANY, MADE ONLY BY THE Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link **LOB WINES** HOIZLING

The above cut illustrates the IMPROVED FORM OF DOUGLE.JOINTED HYDRAULIC
AUTS, with leve attachment, which we manufacture. All similar attles are intringements upon this form,
of Handy and Felber vs. R. Hoshin et als.
We also manufacture the "Ingle-Jointhe Ganrs.
We also manufacture the "Ingle-Jointhe Ganrs.

JOSHUA RENDY MACHINE WORKS,

39 to 51 Fremont St., San Francisco, Oal.

**0**E

HOOKER & LAWRENCE, General Agents, 145 BROADWAY, NEW YORK. And 461 Howard St., San Francisco, where a Mill can be seen in operation and ores will be reduced at reasonable rates.

EKIRBEE-FIGOL WIFF COWE'A'

Section 18.0 core fower required 18.0 row 6.0 
BLAST AND SCREEN MILLS. All substances when ground leave the mill in a finished state—no regrinding being necessary. Automatic i, Wearing parts of Steel and Forged Iron. most rapidly and economically. Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Cement Rock, and other

CENTRIFUGAL ROLLER

**EKIZBEE-LUCOP** 

FORM

IMPROVED

Horse Power required. Space required Size driving pulleys...

HYDRAULIC

MACHINE, HLDBAULIC

GIANTS.

are superseded by our new style one jointed. The decision of Justed Sawyer, referred to by him, is carried up on appeal to U. 8. Supper Courte, with absolute certainty of a reversal in our tayor. Miners and tending purchasers are hereby nothed that we are the sele owners of the patents covering this style of Glant; we will prosecute to the fullest tent of the law manufacturers or users of an intringement.

The covering this style of Glant; we are intringement.

The covering this style of Glant; we will prosecute to the fullest tent of the law manufacturers or users of an intringement.

Send for Circulars and Price List.

## Aetallurgy and Ores.

### SMELTING and LEAD CO. **SETBA**

416 Montgomery St., San Francisco.

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets. And Assay Office, **COLD AND SILVER REFINERY** 

ENGINES, BLUESTONE,

LEAD PIPE, SHEET LEAD,

SHOT, Etc., Etc.

Under Chamberlin Patent. Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO.,

**VESTALES, WATERIALS, MINE** 

GISLS, GIVERNVEE VAD SANDEIES' EL CHEMICVI VALVEVALAS VAD CHEMICVIS' AND MILL SUPPLIES,

114-118 Fine Street, - San Francisco, Winness, Span Francisco, Wo would call the attention of Assayers, Obemists, Mining Companics, Prespectors, city, Companics, Prespectors, Cruciales of Court and Stock of Balances, Furmees, Muffles, Cruciales of Crucial Stock 
nunce Troy at different degrees of fluoress, and valual sables for computestion of assays in grains and gramma will be sent free upon application. Agents for the Pakes will be sent free upon application. Agents for the Pakes will be sent free upon a plated Annaligam Plates. The plates of controlling Plates. The plates of this well-known manufacturer are thorough the finis well-known manufacturer are thorough a plates, and finis well-known manufacturer are thorough the plates of silver guaranteed. Order and his lowest prices.

Nevada Metallurgical Works.

Mear First and Market Streets, S. F. NO. 28 STEVENSON STREET,

Ores worked by any Process.

Assaying in all its Branches.
Analyses of Ores, Minerals, Waters, etc.

Working Tests (practical) Made, Plans and Specifications furnished for the

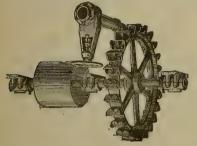
Mines; Plans and Reports furnished. nost suitable Process for Working Ores.
Special attention paid to Examinations

O. A. LUCKHARDT & OO., M. Luckhardt, )
Mining Engineers and Metallurgists.

318 Pine St. (Basement., METALLURGICAL WORKS.

Mining Engineers and Metallurgists.

PELTON'S WATER WHEEL,



THIS WAS ONE OF THE FOLIA WHEELS TESTED L by the labb. Company at Stress Valley, Cal., and five 90 2 per cent., distancing all competitors. Sand for five 90 2 per cent., distancing all competitors. Cal. LACY, SI and 23 Fremont Street Abstrict & LACY, 21 and 23 Fremont Street San Francisco, Cal.

L. PETERSON, MODEL MAKER, INVENTORS, TAKE NOTICE!

258 Market St., M. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, thr, copper and bress.

WORKING TESTS OF ORES BY ALL PROCESSES.

of in the Open Market to the Highest Bidder.

ENCINES AND BOILERS. CORNISH BOLLS, FRASER & CHALMERS,

STURTEVANT MILL.

-bash ni noperation in last-salvow gaitlene gai This Mill see Crueher and Pul-veriner is without rival.

PUMPING MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

**RNCINES** 

W A CHINERY,

CORNIZH

'Sawna

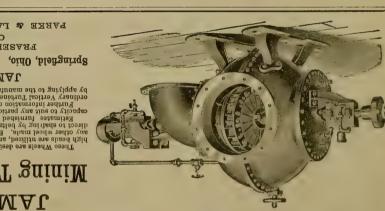
NEW YORK OFFICE:

Boom 48, No. S Wall Street. GENERAL OFFICE AND WORKS:
Fulton and Union Streets, Obicago, III.

UTAH OFFICK-SALT LAKE CITY, UTAH. MEXICO OFFICE: Mo. 11 Oalle de Juarez, Ohibuabua, Mexico.

DENARE OLLIOE:

These Wheels are designed for all purposes where limited quantities of water and high heads are distincted to a designed for all purposes where limited power with less weder than direct to shallong by helts, dispensing with gearing. Beinnates unrished on application for wheels specially built and adapted in Beinnates unrished on application for wheels specially built and adapted in Perinarkes unrished on application of wheels specially built as well as the capacity to suit any porticular case in the other properties of the state of the same of the second properties. The other states of the same of the same of the same of the same properties of the same of th Mining Turbine Water Wheel,



# COLD MINERS

Quartz, Gravel and Placer Mines!

**SMITAMADJAMA** 

HAVE PROVED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded. Over 3000 Orders Filled.

Old Mining Plates Bought, Replated, or Gold Separated.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

FRASER & CHALMERS, General Agents, Col.
Chicago, Ill., and Denver, Col.

JAMES LEFFEL & CO.,

JAMES LEFFEL'S

No. 248 Elghteenth Street, Denver, Colorado.

TRAMWAYS

MIKE ROPE

HALLIDIE'S

HOISTING

SEND FOR CATALOGUE.

QUARTZ MILL,

Hantington Centrifugal

IIGS and TROMMELS.

or 110 Liberty St., New York

663 and 665 Mission ST., SAN FRANCISCO, CAL. ECOPTION FOR CIRCULAR.

NOTICE.—My Silver-Plated Flates are well known and used everywhere. They have proved superior to all others in durability d weight of Silver.

# THOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

Ores Received on Consignment, Sampled, Assayed, and Disposed

San Francisco m Bank of Cal. American Exchange Hotel,

CHAS. & WM. MONTGOMERY, Prop're.

MINING SHYREHOLDERS' DIRECTORY,

#### Bullion Shipments,

be pleased to receive further reports: We quote shipments since our last, and shall

be pleased to receive further reportes:

Con. California and Virginia, Dec. 10, \$104,285; Savege, 10, \$66,000; Sanchard, 10, \$17,068.

Morth Belle Isle, 10, \$36,638; Harbird, 10, \$17,068.

\$38,224; Silver Bow, 10, \$15,792, Moulton, 10, \$38,224; Milvehird, 10, \$36,635; Harbird, 10, \$3600; Germania, 0, \$3600; Harbird, 11, \$2500; Harbird, 11, \$2500; Germania, 0, \$3859; Harbird, 11, \$2500; Germania, 0, \$3859; Harbird, 11, \$2500; Germania, 11, \$3600; Harbird, 11, \$2500; Germania, 13, \$1697; Harbird, 11, \$2400; Germania, 12, \$2990; Germania, 13, \$1697; Harbird, 11, \$2400; \$2400

Our Agents.

Our Frierns can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their fabors of carvassing, by lending their inclusing and encouraging favors. We intend to send none out worthy men.

G. W. Insakus—Arizona,

G. W. Insakus—Presen.

the workly men.

G. W. Hoakles—Arizona.

G. W. Hoakles—Arizona.

R. G. Hustow—Preson Co.,

R. G. Hustow—Brain (kon Tor.)

W. Whintinson—San Joaquin and Stanislaus Co.'s.

T. E. Lookle—San Joaquin and Stanislaus Co.'s.

T. E. Lookle—San Joaquin and Stanislaus Co.'s.

E. H. Schakete—Arizon Ad Butter Co.'s.

E. H. Schakete—Pube and Butter Co.'s.

E. Whillians District Thisman Co.'s.

E. Bouutp Wheing—Tehnina and China Co.'s.

Dr. Stanislaus Co.'s.

Complimentary Samples.

Persons receiving this paper marked are re-quested to examine its contents, terms of sub-grouption, and give it their own patronage, and, as far as practicable, aid in circulating the journal, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription rate, \$3 a year. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

## Ores, Mining, and Commission, HORACE D. RANLETT,

420 Montgomery St., S. F.

UNION COPPER MINE, CEISVORE CO., NEWTON COPPER MINE, Amador Co. Correspondent as Agent for smelters in London, Liverpool, New York, Boston and Baltimore.

Twenty Tears experience, in California, purchasing Ores and dealing in Mines.

Special attention given to management and sales of mines and purchase and shipment of copper produce.

COARTZ MINES FOR SALE.

Under good bonds, several first-class Gold Quartz Mines, located in Amador county on the true lead; well de-veloped and ready for mills. Samples and all particulars s office of the above.

## BOILER SCALE

PREVENTIVE AND REMOVER

Cal. Sugar Refinery, Etc. U. S. Navy,
Pacific Coast S. S. Co.,
Market St. Cable Railway,

DOMNIE B. I. P. CO.

SO4 MARKET ST., SAN FRANOISCO.

SEND FOR CATALOGUES.

TINIWENS HORSE LINIMENT. COLL INVINENT

THE H. H. H. Horse infinite the parks of the property of the parks of

For Sale by all druggists.

Don't Fail to Write,

.. TOE 15, 1887 | S240 Hale & Morice.

Utan Control of State 
the most encouraging features of the present discovery of ore in Hale

Norcross—within four or five feet, mind, of the constraint of the c

LATEST DIVIDENDS-WITHIN THREE MOUTHS.

MEETINGS TO BE HELD.

C Strmb...
Holmes...
Hearmann...
M Hearp...
M Bew...
M Bew...
K Dm.prow...
K Toy...

COMPILAD RYRRY THURSDAY PROM ADDRESTISSMENTS IN MINING DAY SO

Sales at San Francisco Stock Exchange.

0,18 07,2 02,4 08,8 04,8 31,8 37,8 31,8 

230 M

American Bank and Trust Co, Dec. 10, Capital stock, \$500,000. Directors — J. K. Sima, Abner Doble, J. H. Downing, J. W. Farren and David Kerr.

GRAY'S HARBOR MILL CO., Dec. 10. Capital stock, \$150,000. Directore—E. M. Hornek, Chas. Hanom, W. J. Adams, Anton D. Moore, C. F. Talbot and W. H. Talbot.

Euphres, C. Meson Kinne, W. H. Dimond and W. H. Simedberg.

QUAKER G. M. Co., Dec. 10. Location, Calavers county. Capital stock, \$1,000,000.

Calaverse county. Capital stock, \$1,000,000.

Directors—M. W. Beardsley, F. J. Roller, E. B. Rambo, F. J. Roller, E. S. Rambo, F. J. Fletter and Wm. Lette Oliver. Caravy's Harmon M. H. Render, S. Caravis M. Caravis Harmon M. Caravis M. Caravis Harmon M. Caravis M.

EUFHRAT ELECTRIC HAILWAY CABLE Co., Doc. 10. Object, to construct electric railways and convert railways operated by steam and other power into electric railways. Capital stock, \$1,000,000. Directors—E. S. Salomon, F. Enghrat, C. Mason Kinne, W. H. Dimond and W. F. Smedberg.

Superior Court, Department 10, San Francisco:
American Land & Trust Co., Dec., 5th,
Object, to deal in land, water-works, etc.
Capital stock, \$500,000, Directors—N. J.
Sadier, C. W. Wright, Justus H. Edwards,
Uttila Mau and E. H. Morgan.
ROCKY GLEM M. Co., Dec. 7th, Location,
User, Co., Cal. Capital stock, \$2 500,000.
Directors—W. S. Hobart, W. E. Sell, C. S.
Wheeler, Chas, T. Bridge and M. D. Anderson.
LIVERMORE STONE QUARRY Co., Dec. 10.
Capital stock, \$100,000, Directors—J. M.
Capital stock, \$100,000. Directors—J. M.
Knowles, Henry Wadsworth, Geo. H. Hardy,
C. H. Kimball and I. W. Taber.
C. H. Kimball and I. W. Taber.

The following companies have been incorporated, and papers filed in the coffice of the Youth Topatement 10, as a Francisco.

New Incorporations.

MAME OF COMPANY.

On California & Va M. Co.

Beriade California & Va M. Co.

Eursta Con M. Co.

Stradie Valley M. Co.

Stradies Valley M. Co.

Stradies Company M. Co.

Str

Pabor M Co.

olithe Pleece C M Co.

ray Eastle M Co.

ray Eastle M Co.

ray Eastle M Co.

coestle M Co.

| ADMED OF COMPANY | ADMORTON | ADGRADAN | A

sneisco Metal Market.	San Fr
-----------------------	--------

O.L	5 UL	oh a molució								
C	Ø0.₹₩	TAIS COLUMN TAIS TO THE TAIS T								
~	500 150	Mscpineav.								
g	w tr	Mold								
G G	00.4E	Black Diamond, ordinary sizes								
97	@ 9T	STREL-English, Th.								
36		A deilard raup								
	து கு	Chilled, do								
	@ 00	Buck, # bag.								
_	8 00	See a								
	<b>2</b> 08	Shoet, discount 10% on 500 bag. Drop, # bag. 1								
	@ 8	S heet								
92		Bar 5								
34		9								
_	<b>@</b> 00	Lead—Pig.								
-	@ 00	Property and a second s								
_	20 @	Oregon Fig. ton.								
00	CT 13	og stidling in								
0.0	00 @23	Oregon Pig. ton								
-00	- (435	American Soft, No, 1, ton								
00	97.0) -	Eginton, ton								
00	- @30	[RON-Glengarnock ton								
		and apparendoling Month								
98	6) ¿2	Fire Box Sheets								
81	@ 91 @ 22	Ingut								
92	Ø	Sheathing								
	-3 00	Bolt								
30	Ø 97	Bolt								
		COPPER—								
¥9	@ 9	Armagosa								
		the state of the s								
L	@ 39	BORAX-San Bernardino								
-	@) Y6	ANTIMONY-French Star								
- 1	12' 188	THURSDAY, Dec.								
4	12 1001									
WHOLESALE,										

91.	Ø_0	Ĺ	Vaylor & Co	I							
2	@ FF		Aschinery	V I							
g	(a)		Wolf	ī							
_	@\46		Slack Diamond, ordinary sizes	Ŧ							
9 - 2	@ 9	Г	KET-Eughap' Ip.	TE							
	(2) (8) (8)		billed, do	)							
			улск, ф рак	Ŧ							
_	90 00 90 00 90 00		hoet, discount 10% on 500 bag. Drop, # bag.	8							
	@ 8		реер.	8							
94	9 00 0	9 9	785	ř							
_	@ 00		ig—av	ВJ							
-	@ 00	TE	DOORES, AND, A	2							
_	@ 09	3 28	Tay Lane White	3							
0.0	0 (933	3 15	regon Fig. ton	)							
00	- (a 35	- "	gglinton, ton. American Sort, Mo, I, ton	7							
00	- (928	-	gginton, ton	Ŧ							
00	-(630)	-	ON-Glengarnock ton	(B							
97	(0) 5	3	The Low Buegers	I							
St	(a) 6 (b) 6 (c) 6 (d) 6		DEOL.	T							
97	Ø) ~-		······································	8							
30	<b>@</b> 98	3	3105	Ē							
			Naga-								
ęÿ	@ 9		#magosa								
L	@, 89		Bernardino	BC							
-	@ 16		TIMONY-French Star	A.N							
.7	THURSDAY, Dec. 15, 1887.										
	WHOLESALE.										

di ned va	ESALE.	MHOU	
mar.war	renem	OOSTOURT I	TTRO

	_		
Market	Metal	k'rancisco	San

ē	(a)	ъ						4.8					• •		**	4 6					• •		LOI	ä
-	ão,¥	6			9.5		• •	:		* 5	102	Z TE	S	IB	пτ	LO	O.	ra	TO	0114	BIC	тэ	DE	g
97	Ø.	9T		• • •					• •	• •		÷,	. 1	• •	·i	•	m'	T I	rst	121	α'n		ЕГ	E CI B
			7.				٠.			2.5					* *	• •				OT	3 4	pai	піт	ıo.
		00	7.				٠.٠						٠.	• • •		* *	1.5		• • 5	BE	OT RÉ	6 13	Ιοπ	я
_	(D)	08	Ť	'SE	301	괊	٩ď	r.o	m		2	e (	1 4	MC	u	o '	%n	T a	uπ	10:	IBC	p'	iot	18 18 18 18 18 18 18 18 18 18 18 18 18 1
	0	8	•				- +		::	٠.				,,,,			150		•	٠.	• •	· . a	366	เล
92	900	09	c	- 61			٠.		• •	• •	٠.	٠.						* *	***		2 4	• • •	TE	я
		ÕÕ	č														* *		• • •	* *	St.	<b>T</b> —	·Œ	v gr
-		00	TP	4 1. 1				1								11			Υ.	01	ĸr'`	ŝ	100	8
_		20	77	٠.,			6.5					١.				٠.	.9	att	TA	ιá	ūτ	PT.	£m	õ
00	(953	00	12				4~			•	1	٠.	* *	• • •				άc	1	Ìī,	a i	αō.	147 168	ñ
00	(0.32	-						• •	• •	٠.	٠.	٠.	ш	32	ίŢ.	10	NΤ	60	TOP	2 1	18:	LIC	υue	E
00	87.5	_		• • •		•	• •						6	٠	•••		**		uc	23	·π	oio	mβ	ST.
00	@30	_					* 1								uα	12	GE	ou	SL	No	ıər	n-	Ň	og.
92	(20)	98			• • •					•						-0	7.	518	oee	R	X	я	911	A
St		91			• • •	• • •	٠.	• •		٠.	• • •	• •				٠.						13	กสิ่ง	ΙΪ
92	<b>®</b>					• •		1		•		•			* *	٠.		٠.٠	• • •	.9	π	Tri	olt nga ire ire	ıĝ.
30		98		• • •	• • •	• •	٠.	• • •	• • •	•	• • •		۰	٠		• •	٠.		٠		• •		310	ă
	~																							
£9	(D)	9					* *		• • •			1				* *	٠.	• • •	. , .	*8	80	Tr.	LI	¥
7	0,3	9												- 01	ш	Dx		JO:	ST :		12-	X	V3	103
-	(D)	6			• •	• • •		• •	٠.	• •		* *		FL	ns	ч	ac	16	À-	—X	ĨN	ON	ΙIJ	NV
.7	881 '9	gT	eg.	D	• 2	XV	as	E.	0)	4,7	G.								_					
		-		~				72	7.07	32	. FFE	cr.	25											

# Mining Share Market. COMBINED STEAM TRACTION HEADER AND COMBINED STEAM TRACTION HEADER NO. THRASHER.—George S. Berry, Visslia. No. 374,539. Dated Dec. 6, 1887. This is one of the control of t

STAYSAIL HANK.—Johan O. Wikiman, Educke, Humboldt Co. No. 374,530. Dated Dec. 6, 1887. This is an improved staysail harb, conseising of a section having one end halved with a staple projecting from said halved halved with a staple projecting from said halved to the lower part of the inst section, and have and solvest of the inst section, and said staple as typ formed on the first ecciton, and a cord passing through said scape, whereby the sections are secured. By this construction it is easy to remove the staple, whereby the sections are secured. By this construction it is easy to remove the stay said whenever it is not needed, instead of bread or cap, and it can be easily replaced at any bead or cap, and it can be easily replaced at any time in the same manner.

STAYSAIL HANK, -Johan O. 'Wikman, Eu-

Quinn and Samuel Crossley, Deggett, San Ber.

1857. The danyer eignal is automatic. It, 1857. The danyer eignal is automatic. It consists of signals or lights situated at a sufficient of danger, since of signals or lights situated at a sufficient distance either side of a point of danger, and connected by wires with suitable weight or stonathig mechanism which will serve to distant the signal to the engineer of an approach. The device is approached the play the signal to the engineer of an approach at the point. The device is specially nacin or bridges or culverts rendering portions of the road invisible from the approaching train. It is also visible from the approaching train. It is also visible from the approaching train. It is also blaces.

Quinn and Samuel Crossley, Daggett, San Ber-DANGER SIGNAL FOR RAILROADS.—Josish D.

Among the patents recently obtained through Dewey & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following sre

Notices of Recent Patents.

WORL—Copies of U. S. and Foreign Petents incubabled by Bwark Go., in the alphofest and reference for the resemble of the resem

Ogn. 374,373. — R. R. DANGER SIGNAL—Quinn & 374,375. — R. R. DANGER SIGNAL—Quinn & 374,378. — DAM AND RESERVOIR—Harriet W. R. Wilkman, 174,378. — DAM AND RESERVOIR—HARRED, WARRED, Call. HARRED, WARRED, Call. HARRED, WARRED, CALL HARRED, WARRED, CALL HARRED, CALL HARRED, WARRED, CALL HARRED, 
TOR WEEK ENDING DECEMBER 6, 1887.

374,334.—BLOWER FOR STOVES OR GRATES—
6. J. Backus, S. F.
7. J. Backus, S. F.
7. J. Backus, S. F.
7. J. Backus, S. F.
374,320.—CUTTERS TOR REAPER—Geo. S. Beity, S. J. Gardy, Ogn.
374,520.—CUTTERS TOR REAPER—L. W. Clark, Albany, Ogn.
374,178.—GLATER—F. H. De Guerre, S. F.
374,459.—AXT—F. H. De Guerre, S. F.
374,459.—AXT—C. Daloney, Lower Lake, Cal.
374,459.—AXT—C. Jaloney, Lower Lake, Cal.
374,459.—AXT—R. H. Backus, S. F.
374,459.—AXT—C. Maloney, Lower Lake, Cal.
374,459.—AXT—R. M. Backus, Cal.
374,459.—AXT—C. Maloney, Lower Lake, Cal.
374,459.—AXT—R. M. Backus, Cal.
374,459.—AXT—R. M. Backus, Cal.
374,459.—AXT—C. Maloney, Lower Lake, Cal.
374,459.—AXT—C. Maloney, Lower Lake, Cal.
374,459.—AXT—C. Maloney, Lower Lake, Cal.
374,459.—AXT—C. Maloney, Lower Maloney, Cal.
374,450.—AXT—C. Maloney, Cal.
374,4

FOR WEEK ENDING DECEMBER 6, 1887. From the official report of U. S. Patents in Dewny & Co.'s Patent Office Library, 220 Market St., S. E. Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific States.

Inventors,

List of U. S. Patents for Pacific Coast

worthy of special mention:

There are several large mines on the Gomestock which are now producing paying ore, and as a result the stock market does not seem dependent on the news from any one mine. Still the state of the market is not very strong, and fluctuations are not great. The Virginia Extery fore any that the minorance of the work forces, but alone by the Savage Hale & Vorcross, Chollar, Portes, Jacket, Orown Piont, Belongh they done by the Savage Hale & Vorcross, Chollar, Portes, Jacket, Orown Piont, Belongh they define the manner and developing their mines on their not viridends and developing their mines on their own resources, is difficult to overseit.

The series of the product of the product of the mines above to develop the product of the produ There are several large mines on the Comstock

COLLEGE, COLLEGE, SA Post St. B. F. Send for Chronian.

30 to 40 Spear St.

WATER TANKS.



## ELECTRIC DEVELOPMENT COMPANY.

## Electric Motors, Dynamos, Tramcars, Elecators, Signals and all kinds of Electrical Systems to smission of power, either direct or with atorage Batteries, etrigid oirtoelff ork & treosebasoal

For Mines, Hoisting Works, Mills, Reduction Works,

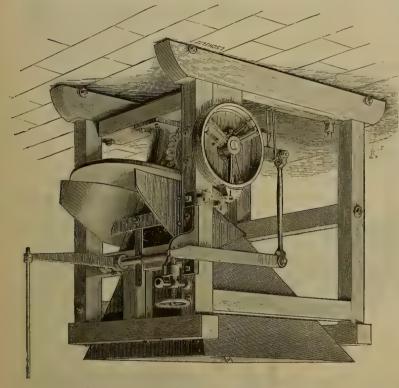
EDISON INCANDESCENT LIGHT,

day and afford a means of working the whole 24 e is an object. Estimates and designs on app

#### Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

## 10SHNY HENDX WYCHINE MOBKS'

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



superior to any form of "Roller" Feeder manufactured. We refer to the follow-ing gentlemen who have turnished us with testimonial letters to the above effect, which can be seen at our office, viz.: The best form of Feeder ever devised, and pronounced by reputable mining men to be far "HENDA" IMPROVED "OHALLENGE" ORE FEEDER.

W. Своскев, Sapt. Banker Hill Gold Min. | D. G. Wickhan, Taylor Mine, Greenwood, Cal. ing Co., Amador City, Cal. | J. В. Твестола, Supt. South Spring Hill Gold W. G. Roberts, Greenwood, El Dorado Co., Cal. | Mining Co., Amador City, Cal.

ME VHE MVARKVCIRKERS OF THE

«СНАГГЕИGE,» "STANFORD,» "TULLOCK,» & "ROLLER» FEEDERS,

And will furnish descriptive Catalogues and quote prices upon application.

JOHN T. SULLIYAN

Boot and Shoe Maker. SO Fourth St., Ploneer Building

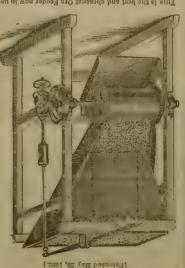
Goods sent by mail or express. Maker of the famous Miners' Shoe.

GOLD QUARTZ MINE and MILL

WANTED.

State development and full particulars. Addr In California, ready for or in operation.

# THE ROLLER ORE FEEDER



is thin dees and cheapest Ore Foeder now in use. (twer parts, requires less power, is simpler in ent than any other. Feeds coarse ore or soft clay iformly, under one or all the stamps in a battery

in the Bunker Hill Mill it has run continuously for two ars, nover having deen out of order or costing a dollai

Golden State and Miners' Iron Works,

Sole Manufacturers,

Mining and Mechanical Engineer ISBAEL W. KNOX,

Mines, Mining Machinery & Supplies.

Mines Examined, Reports and Ferimates Furnished Contracts made, etc.

and Quartz Mill Machinery.

IMPROVED PORTABLE HOISTING ENGINES.

## NATIONAL ROCKER QUARTZ MILL

KENDALL'S PATENT, AUGUST 24, 1886.

CAPACITY, 12 Tons in 24 Hours, 8 H. P.

toritist or strong strong the conficulty examine and pass fundament this first or strong strong construction of the following The Patentee and Manufacturers

Note cost is less than on other particulars;

In The cost is less than of same about 1.

In the free in the interest of same about 2.

In the free of same about 3.

In cost of same about 3.

Stamps, Ball Pulverizers or any Me cuallenge competition with 8. In its simplicity of construction

pany and others are hereby nothfed that the com-any will issue first mortgage, 30-year & per cent non-accumulative income Bonds, for the purpose of find company. Ing the present mortgage indebtedness of the company-subscription to said bonds at 50 per cent of their par value will be received by the London, Paris and Ameri-can Bank (limited), by Daniel Moyer, No. 320 Sansome street, and at the office of the company, No. 320 Sansome street, and at the office of the company, No. 320 Sansome street, Room 32. STOCKHOLDERS OF THE SUTRO TUNE COM

SUTRO TUNNEL COMPANY

VIL KINDS OF CASKS, TANKS, Etc.

KIUDY BROS" Eroprietors,

CALIFORNIA WINE COOPERAGE CO.

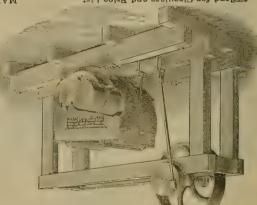
SED FTEDCISCO

co, that circulars and subscription blanks may be sent

N. W. Corner Main and Howard Sts., San Francisco,

AMALGAMATING MACHINES, CASTINGS AND FORGINGS OF EVERT Stationary and Compound Engines, Flour, Sugar, Saw

MARSHUTZ & CANTRELL, Sole Manufacturers.



#### No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.

#### ("DYNAMITE" or "GIANT") MILKO-GIVACERINE

Vigorit "LOW" Powder, Blasting Powders.

FOR REMOVING STUMPS AND TREES

WORKS: California City, Marin Co., Cal.

ED' G' LUKENS, Manager.

## Iron and Machine Works.

## CALIFORNIA MACHINE WORKS,

Steam Engines, Flour Mill, and Machines Machines WM H. BIRCH & CO.,
EVGIVEERS AND MACHINISTS,
No. 119 Beale St., - - San Francisco
— suudse op—
— suudse op—

Brodle Rock Crushers,
Steam Power, Hydraulic,
Side Walk and Hand-Power

Manuscturers of B. E. Henrickson's Patent Automatic satety Catches for Elevators. All kinds of machinery nade and repaired. ATOrders Southway. ELEVATORS.

#### Golden State & Miners Iron Works.

derutecture fron Oastings and Machinery of all Kinds at Greatly Reduced Rates.

STEVEUSON'S PATENT

#### Rold-Board AMALGAMATORS,

Golden State Pressure Blowers.

first St., between Howard & Folsom, Sts

THOMPSON BROTHERS,

ENKEKA FOUNDRY

29 and 131 Beale St., between Mission and Howard, S.F.

WILLIAMS & OFFOR,
MANUFES OF GENERAL MAUHUERY
Works, No 31s Mission St., San Francisco.
Special affention given to Woodworking Stachinery.
Stemm and Gas Engines. Correspondence solioifed.

#### MINING ENGINEERS.

MINING EXPERT AND GEOLOGIST. Civil and Mining Engineer, W. A. GOODYEAR,

Address " Business Box A," office of this paper, San

#### ROSS E BROMNE'

Mining and Hydraulic Engineer,

No. 307 SAXSOME ST., SAN FRANCISCO.

## N. W. SPAULDING

Manufacturers of SAW COMPANY

inserted Tooth

CIRCULAR CHIZEL BIT

'SMES

nade to treat and tot beset that the case. GAW MILLS AND MACHINERY



Zinc, Cropper or Br ss Screens for all purposes. Cali fornis Perforating Screen Co., 145 & 147 Beale St , S. F

Mechanical Photographers, RUNNELS & STATELER,

Machinery, Models and Buildings 957 Market St., San Francisco. Views or

A SPECIALTY.

Established 1856. San Francisco Cordage Factory.

Extra sizes and lengths made to order on short notice

TUBBS & OO

11 and 618 Front St., San Francisco. Constantiy on hand a full assortment of Manila Rope, as Rope, Tarred Manila Rope, Hay Rope, Whale

WINING AND SCIENTIFIC PRESS.

SHIPPING AND COMMISSION MERCHANTS,

S09 and 311 Sansome Street, San Francisco, Cal.
Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents for the Mexican Phosphate and Sulphur Company's Products.
General insurance Agents.

General Agents for the Pacific Coast of WATIONAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass

# PACIFIC ROLLING MILL CO.

<u>Zymytoł 19912 bas</u> zymitzby 19912 tzby

UP TO 20,000 LBS, WEIGHT,

True to pattern and euperior in strength, toughness and durability to Cast or Wrought for pattern and enterprise.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA

SUPERIOR TO IRON FOR SOFT and DUCTLLE

MOBKS OBE MEL OB DLK

Tustin's Pulverizer

MISCELLANEOUS MACHINERY.-Flour

Crushing, Amalgamating Fans, Setti rs, Furnaces, Retorts, Concentrators, Ore Freders, Rock Breakers, Furnaces for Reducing Ores, Water Jackets, etc.

pressors, Air Receivers, Air Pipes.

MILL MACHINERY. - Batteries for Dry or Wet

MINING MACHINERY.—Hoisting Engines and Works, Cages, Ore Gare, Pump Columns, Mir Comand Pumps, Water Buckets, Pump Columns, Air Com-

MARINE ENGINES AND BOILERS.

-- ичильметинева от--

LOCOMOTIVE AND MARINE FORGINGS,

ALSO Steel Rode, from \$ to \$ inch dismeter and Flats from \$ to \$ inch. Angles, Tees, Channels and other sheel Wegon, Buggy, and Truck Tires, Plow Steel; Machinery and Special Shape Steel to size and leng Teach AALLS from \$10 to 45 pounds per yeard. ALSO, Exhlaced and Machine Bolts, Lag Sciews, Julis, Weshers, Shape and Truck, End Connecting Rods, etc. Car and Loconoctive Axies and Fixed and Steel Bridge and Machine Bolts, etc. Car and Loconoctive Axies and Francial Interest from \$10 to \$

🖅 Orders will have prompt attention.

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

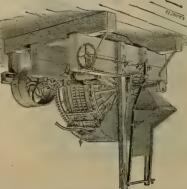
## IBON

HINCKLEY, SPIERS & HAYES, Proprietors.

San Francisco

[ESTABLISHED IN 1865.]

Office, 290 Fremont St.,



TUSTIN'S PULVERIZER.

**ENGINES**BOIFEBS

Either for use on Steamboats or for use on Land.

AGENTS FOR THE PACIFIC COAST FOR THE or every presented to and at very mo-Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

SPECIALTIES: Deane Steam Pump.

Corlies Engines and Tustin Ore Polverizers. DEAUE STEAM PUMP. Agents and Manufacturers of the Liewellyn Feed Water Purifier and Heater.

# MACHINERY

SLEVM ENCINES'

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc.

St., San Francisco, SAVAGE, SON & CO., 135 to 143 Fremont GENERAL MACHINE WORK,

## PERFECT PULLEYS

First Premium Awarded at Mechanics' Fair, 1884,

Eaches of California, Orgon and Alvanona. Lightness, Estrongeest, Choespest and Montana, Wyoming, Utab and Alvanona. Lightness, Estrongeest, Choespest and Best Balanced Pul. sy in the World. Also Manufacturers of AFTING, HANGERS AND APPURTENANCES AFTING, HANGERS AND APPURTENANCES. STRONG Medart Patent Wronght Rim Pulley

SHA FTING,

Room 709. C. A. STETEFELDT, President.

This paper is printed with ink Manufac

tured by Charles Eneu Johnson & Oo., 500

South 10th St., Philadelphia. Branch Offices. 7 Rose St., New York, and 40 La Salle

St., Ohicago. Agent for the Pacific Coast

Joseph H. Dorety, 539 Commercial St., S. F.

Nos. 189, & 181 Fremont Street,

7 Д

> all kinds of MACHINERY. STEAM PUMPS, STEAM ENGINES,

**WACHINE MORKS** 

H. EVANS

Office, 40 Nevada Block,

Dynamos and Motors of all sizes for Conveying Power om Waterfalls for use in Mines and Mills, erected under aranty of performance.

Electric Reilways, and Apparatus for the Electric Transmission of Power.

Storage Batteries.

MOTORS, LAMPS

Keith's Electric Dynamos

M' & KEILH

21 & 223 First St., Sau Francisco, Ca' JOHN W. QUICK, Proprietor.

San Francisco Pioneer Screen Works,

Orders promptly attended to.

or Flour and Rice Mills, Grain Separators, Revolving and Safe Serens, Stamp Estetres and all kinds of Mills, grain Estetres and all kinds of Mills, grand Milling Machinery. Iron, Steel, Copper, Brass, inc and other metals pumohed for all usees to have careful and Slot Funched Soriesns.

Thursd and Slot Punched Soriesns.

Mining Soriesns a specialty, from Mo. I to 15 (fine).

PERFORATED SHEET METAL

Rest and Cheapest in America.

BATTERY SCREENS

GREAT REDUCTION!

SAN FRANCISCO, OAL. 8 California St., and 21 Fremont St

PARKE & LACY

INCERSOLL ROCK DRILL CO.

For Catalogues, Estimates, Etc. address:

THIRD EDITION NOW READY.

SENT FREE ON APPLICATION

Section 16x16 feet; Length 36 miles.

NEM LOBK

AND FULL DESCRIPTION OF THE

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in

ENGINEERS, CONTRACTORS,

WINING WEN

NOTICE TO

WITH MAPS, ILLUSTRATIONS

Рассогу, 11 Stevenson St.

San Francisco, Cal.

THE RUSSELL PROCESS COMPYY.

NEM YORK OFFICE, 18 BROADWAY

(8212'00) L'O'B' FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

OVER 1400 ARE MOW IN USE. Concentrations are close from the first working. The wear and

The Montana Coupany (Limited), London, October 8, 1885. controlly of your Venners in a competitor erral with other similar machines controlly of your Venner, as is evidenced by the face of our having lab delivery. Yours truly,

THE MOUTAAN COMPANY (Limited), on the contraction that definited), and more standard that definited).

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; February 20, 1888; September 18, 1883. Patents applied for.

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

OR VAUNING MACHINE, ORE CONCENTRATOR **JUNA BHT** 

SAN FRANCISCO, CAL. Room 7, No. 109 California Street,

\*(00°0gg\$) FIVE HUNDRED AND FIFTY DOLLARS

The present improved form of the colebrated "Triumph" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their trames being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built trames being of iron, insures their solidity, durability, and perfect steadiness of motion when operated. They are built as compactly as their requisits strength will permit, weigh less, regular less freight space in boxes, by which their cost of transportation is reduced, and occupy less mill room when set up, his miportant improvement has recently been introduced into their construction, which consists of a kirwick Tank, placed in front of and which takes the discharge from the feed and amalgam bowl. The improvements is in the reciprocal motion which is imparted to this take in the reciprocal motion which is imparted to this take in the sample of the sample of the state of the sample 
"TRIUMPH" ORE CONCENTRATOR

SINGLE OF DUPLEX, STEAM OR BELT POWER.  $^{\prime}$  ,  $S_{\rm e}^{\prime}$ id on the Pacific Coast.

avn paruciaco. JOSHOR HENDY MACHINE WORKS,

Nos. 39 to 51 Fremont St.,

NATIONAL AIR COMPRESSORS. 225 and 227 First St., San Francisco. RIX & FIRTH, and WATER POWER COMPRESSED

WINERS, HORSE WHIM

All wrought from. Nogears, no breakage, One horse will easily handle rock or water to a depth of 556 feet, giving entire ential call to the prospector. Price, complete, \$200. 150 sold on this Cogst.

KNICHT'S WATER WHEEL,

—вов-

MIEES, PUMPING AND HOISTING.

Over 300 in use. All estimates guar-auteed, Send for Circular.



F. A. HUNTINGTON,

MANUFACTURER OF

Centrifugal Roller Zlien**h** 

Mining Machinery of Every Description, CONCENTRATORS AND ORE CRUSHERS,

Steam Engines and Shingle Machines.

No. 45 FREMONT STREET, SEND FOR CIRCULAR

GENERAL AGENTS, PAN FRANCISCO CAL

Centrifugal Roller Quartz Mill.

CAPS and FUSE for Sale.

LVHTA овк скизнки

200 Sold on this Const. Has less repairs than any other Drill.

NATIONAL ROCK DRILL

LIFE-SAVING RESPIRATOR

and Salivation. Entirely Prevents Lead Poisoning

est Sond for Descriptive Circulars containing Testi-

SAN FRANCISCO, CAL.

THE GIVAL POWDER COMPANY

The Salest and Strongest High Explosives in the Market.

Of Different Strengths as Required. GIVAL BOWDER OF DYNAMITE,

OBEL'S EXPLOSIVE GELATIVE, Stronger than Dynamite and even Salet in Handling.

10DZON POWDER IMPROVED.

BANDMANN, NIELSEN & CO., FOR KAILROADS AND LAND CLEARING. Is from three to four times stronger than ordinary Blast-ing Powder, and is used by all the Kailroads and Gravel Claims, as it breaks more ground, pulverizes better and aves time and money. It is as dry as the ordinary Blasting Powder and runs as freely.

DEWEY & CO., [ BISPALOT 13 Front St. ] PATENT AGENTS.

PORTLAND, OREGON,

SALT LAKE CITY, UTAH.



Machinery

NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS. Steam Pumps, Wood and Iron Machinery, Working

## NOTJEZA **ROILER.**

A NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

TARE OF STREET OF STREET OF STREET OF STREET OF STREET STR

MINING WACHINERY,

BRAYTON & CO.,

San Francisco, Cal. PACIFIC IRON WORKS

L. R. MEAD, Secretary.

R. S. MOORE, Superintendent.

WM. H. TAYLOR, President.

HEINE SAFETY

Manufacturers and Sole Agents for the Pacific Coast for Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY, DURABILITY, TOOF

ECONOMA'

AND FACILITY OF INSPECTION and REPAIRS.

Guaranteed More Efficient than any other Boiler made. Boilers can de seen working in San Francisco at Palace Hotel, Spring Valley Water Works Hueter Bros. & Co., Celfitornia Jute Mills, and other places.

WILSON'S PATENT GAS-PRODUCER. STEAM BOILERS of all descriptions. SUGAR MACHINERY—Sugar Mills, Vacuum Pans, Clarifiers, Double Effects, etc. MITSON'S BYLENI GVS-PRODUCER.

WITSON'S PATENT GAS-PRODUCER.

re of 120-stamp Gold Mill for the Alaska Mill and Mining Company, 60-stamp Mill for Quartz Mountain g Company. STEAMSHIPS—Steam Yachts, Marine Engines and Boilers, Screw Propellers, Centrifugal Fumps, Steam Propellers, Centrifugal Fumps, Steam

OLARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces of all leinds.

AIR COMPRESCORS—Rope Power Transmission.

HYDAGLIG PUMPING and Hostbrik Machinery.

WROUGHT-IRON WATER PIPE a Specialty. More.—Have just completed order for 35 miles of pipe Policy Wester Works Company, San Francisco.

SAW—MILL MACHINERY of all kinds.

STEAM ENGINES—Coolies, Silve-Valve, Poppet Valve Automatic, Single, and Compound.

SOLE MANUTACTHREKS for Facilic Coast of the Celebrated "Heine" Fatent Safety Boiler (Water St. Machinery and St. Machinery M

**MATER TUBE** 

**BOILER**,

MACHETH PATENT STEEL-RIM PULLEYS—Fifty per cent lighter a tron pulleys; will not break in kransportection.

the full weight of alivor agreed upon, and are tested be-fore leaving our works, thereby avoiding the complaints about light weight, made so often before we started in this branch of industry. NOTICE.-All our plates are guaranteed to have

521 & 523 Market St., San Francisco, JUSTINIAN CAIRE, Agent,

Assayers' and Mining Material.

BATTERY SCREEUS AND WIKE CLOTH

HADRO-CYBBON YEEVA LOBUACES Agent for HOSKINS'

W. T. WENZELL,

FOY SAVING

MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES.

FURNISHED ON APPLICATION, GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

SAN FRANCISCO AND PLATING WORKS, NOVELTY

No. 108 FIRST STREET.

AND RAILROAD CASTINGS. CAR MHEETS CHIPPED

IRON CASTINGS of all descriptions.

MEDAL AWARDED, MECHANICS' FAIR.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

FOR SALE,

VERY CHEAP. Apply 130 Sansome St., room 12. 1 New 12-inch, 35 H, P. Engine. S Triumph Concentrators.

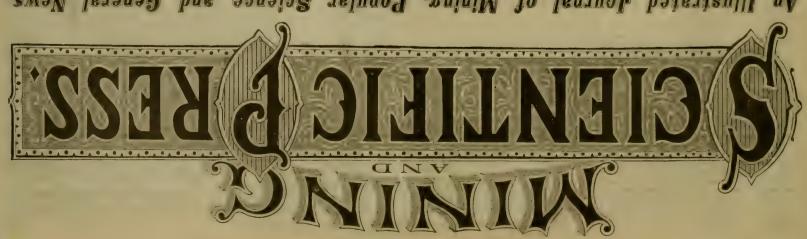
588 INENTIEST STITEST,

Opposite Second St., San Francisco, Cal
Grath sanlysis, valuitative and quantitative, made of
ores, metche, solis, varters, toods, medicines, industrial
products, poisons, etc., Correspondence solicitest,

Analytical & Consulting Chemist.

1AS, W. KERR.

STEIGER & KERR,



Illustrated Journal of Mining, Popular Science and General News.

Тре Соррег Магкеt. BA DEMEA & CO.

Workingmen's Houses.

Mumber 26.

selves in many respects. They are were nearly selves in many respects. They are elements and having the fer selves, and when they leave their hair selves on our put on a bidy may look will they may look will up an end up to selve that they may look will an end our selves that they may look are the object. panying engravinge. The houses have gardens strended, and rents are low. The Alsatian factory operatives constitute a class by themone dwelling. This is illustrated in the acco seect four separate houses under one roof, upon a square, each fourth of the square constituting ot ai egattoe esucdinid edt to naiq fausu ed? industrial societies, and the dwellings, which are separate, show the care of the employers. evived from the efforts of sotive house, and in others they are built by building societies; in Europe the latter plan is often followed. Mulhouse, in Alaze, has had the benemen at the big factories in the United States. In some places the factory company builds the We recently gave a description, with drawings, of the operatives houses at Willimantic, Conn., as one of the types of houses of working-

edt agnord gaiog ni noitesaebnoo biova ot needs with a pipe of double-burnt earthenware, \$11 or \$12 a year. The smoke-pipe, of sheet iron, leaving the stove in the dining-room, consupply vegetables worth at market prices well-holes 26 feet deep, and disposed along the sidemesis. The 144 square yards of garden transfers the dispersion of the second side of the second side of the second sec refuse water of housekeeping runs into the oity sewer, Water is furnished by pumps set over of vegetables and straw for their gardens. The is covered with a coating of cament, and the bottom is of conceres. The Alsatian workmen generally use the house refuse with the remains ventilating pipe runs from the drain to the roll.

The stairway is lighted by means of a glazed stylight on the roll. The inside of the drain. brick, and the roof is covered with tiles. The The framing of the windows is of stone without projection. The area covered by the house is 88.69 square yards. The ohimmey shaft is of paying S1.12 monte a month. The houses are coated with montes month. The houses are coated with morter made of bydraulic stone and river sand. The stone is colored white, yellow or gray. The sills of the windows are of stone, as well as the thresholds of the doors. The lintel here are of round iron. The houses are separated by lattices made of oak-laths. The stone without will be windows is of stone without The Iraning of the windows is of stone without total, \$463.41. The price of a group of four total \$463.41. The yearly rent is \$83.88. The tend of 15 years by tend of 15 years by ers described, and the engravings show the direct of the cost of a forest of a forest of a forest of the cost of t the street. Bread and vegetables are the ohief articles of tood, meet not being used so much as articles of tood, meet not being used so much as in England or this country.

In Carrol D. Wright's monograph on "The Factory System," published in the U. S. Census regorts, the workingmen's honses at Mulhouse are described and the programments and such as a such as a such as a such and a such as a

THE British iron and Oako Oarde has arrived The lack of orders from railroad companies, said of the steel ploying 2000 men, will be closed in two weeks THE Western Steel Works at St. Louis, em-

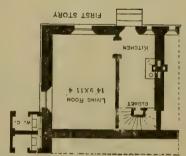
tons of railroad iron, the duty on which

on the Sound after a passage of 138 days from Maryport, England. She has a cargo of 1,500

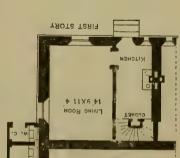
amounts to \$42,000.

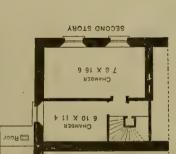
The Advance in Lead. SAN FRANCISCO, SATURDAY, DECEMBER 24, 1887.

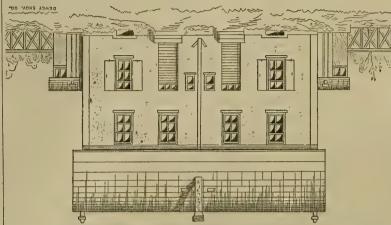
result is very gratifying to the owners of mines sign under the guise of a business speculation. of those metals. It is known that French buy- sign under the guise of a business speculation. wanted to prepare France for war, and that the tin purchases are merely to cover up that dehow far this French syndicate may go. It is now far this French syndicate may be no per and lead may be not only for the rise in copper, but that in lead It is stated that it is a French syndicate, with headquarters in Paris, that is responsible all the lead in sight, and there is no knowing all visible supply. Brokers say it will not re-quire an extraordinarily large capital to secure



and tin also. Whatever may be the cause, the







WORKINGMEN'S HOMES AT MULHOUSE, ALSAOE.

gant prices within a short time. lead are, therefore, looking forward to extrava-Holders of

seven-twelfths for deliveries in January, Febof this metal. It is now quoted at about five one cents per pound in New York and five and period there has been a depression in the price lead, there is a large production in Utah, Mervada and Idaho, on this coset, and the miners will be glad to see an advance. For a long While Oalifornia does not produce very much

THE reduction works at Portland, Oregon,

European markets until these are depleted of are reducing 40 tons of ore per day. quietly bought up in England, Spain and other It is known that small lots have been and the shortage is expected to affect the mar-ket seriously should the foreigners continue to bought up and exported for the French account, upon it. Over a thousand tons have been sary to import the metal, even with a \$2 duty of lead pipe, sheet lead, shot and lead paints to lead prints are required so much that it was found necesmand for home consumption. Manufacturers this country. A New York journal says: Although lead is produced largely in the United States, the mines cannot meet the de-

Europe, and are now turning their attention to may be even larger next year. ers have secured all the marketable lead in Should this be the case, the demand for lead

40,000 tons of Chili bare obanged hands in England last month. The total visible supply in England and France and on the way is 44,973 in England and France—and pay the syndi-cate such prices as they choose to sak. Some the quantity of furnace material would be very small. Smelters would have to fail beek on the souls as 35,525 tous stock to a 35,525 tous tous to the souls are to a souls as the souls are to a souls as a souls are to that the supplies of copper cannot show much increases for the next four or five months, while Sons, the Liverpool copper merchants, state the Calumet and Hecla mine. James Lewis & ing dependent on extension of plant, The ni eni ent bet the in months, increased production at both places beto seilqqua eht ni eesle place in the essenoni isri emos rot roireque est to sustron mort reque the Obili bars; and that it has taken place on the Obili bars; and that it has taken no make. that a large "bear" account was open vance on prices began, both smelters and manu-facturers in England and France held very small far has been due to the fact that when the ad-York. The success of this large operation so WeN ni beaadstuq reqqoo assiremA sht bas essa. d delivery in addition to large quantities of

per, as they are believed to have secured some 30,000 tone of Chili bars on the epot and for for

practically obtained control of the stock of cop-

start work again. A good many properties long idle are about starting up. It is stated that the French syndicate has

There is one thing sure, and that is that the mines of this coset will all reap a benefit from the rise in price. A number of mines in Arizona, California, Nevada and Montana can now stark work again. A cond matar

to a profit at that figure, and some of them had to shut down. Since October 28th last copper has advanced from 104 cents to 104 or 104 cents to 104 or 104 cents to 104 cents

Superior region have for a long time, by keeping of opperior region have for a long time, by keeping copper down to about 10 centes a pound, opper to the country, while the mines of Mecopper to the country, while the mines of Mecopper to the mans and Arizona could not all work as the mines of them the country and some of them

Heels and the other copper mines of the Lake

Superior copper and no more. Calumet and month, and we need 5,000,000 pounds of Lake certainly not more than 10,000,000 pounds per ingots and copper mattes. The consumption is ni shanoq 000,000,8 gairtogxa asad sad bas produces more than 13,000,000 pounds,

000 pounds a month, while the whole count-Superior mines in average times is 6,500, The entire monthly production of the Lake

areduction of 2,200,000 pounds, or 55

shut down on the production, so that now the mine does not yield over 200,000 pounds per pounds of ingot copper per month, but the fire

000,002,4 gaiouborq producing 4,200,000

no reason to believe that the famous mine is so badly injured as at first reported. The Calumet

will out off the demand at least one-third.

The fire and cave in the Calumet and Heela mine has stimulated production, but there is

secing ni sonavba tasig giest this nisni sacots

years that copper has gone so high. Manu-facturers who were "caught out" with small

week the New York market has touched the New York and 18 50.7... 35 and 18 50.818 and market mer min series of the New York and \$18.05 and \$18.

Copper continues to advance in price.

18 cents, or say ? cents a pound.

tens of copper.

O, how Thy worth with manners may I sing When Thou art all the better part of Me?

itie. His heart groans at the thought, and is deaply wounded.

He deligns to consider Shakespeare a sufferent from the same "deep wound," "Is heart groans at the thought, and is alsace to always will appear from a statement of the settler," but the same "deep wound," "Is he contained to the settler," but the same "deep wound," "Is he contained to the settler, and shakespeare becomes the "Island to the settler," but the same "deep wound," "Island to the settler," but the same "deep wound," "Island to the settler, t those who, in after generations, should seek for the meaning of this poem, to study to deter any beauty in its composition, but solidy to disappear, be about in its composition, but solidy to disappear, and be soledy to disappear whole, are by Judge Hosmer called "A Poem," each Sonnest a Stanza, so perfect is the unity pervading them.

Sonnest xxxvi I in this and the three following stanzas, addressed to Thy (Thought), he call him what his plan is for concealing from the public the part he is to play in the composition of the dramas. He and Shakespeare must live as if strangers to each other. Their objects (" loves ") are of course undivided.

Sonnest xxxix: Some idea of the personality of Shakespeare, and of course undivided.

Sonnest xxxix: Some idea of the personality of Shakespeare, and of Shaces appreciation of the least its given in this stanza, addressed to Thy (Thought):

That the expression of autobiographical feedings ings is contained in them is asserted by Wordsworth, Bir Henry Taylor, Mr. Swinburne, vorith, Bir Henry Taylor, Mr. Swinburne, vorith, Bir Henry Taylor, Mreyssig, Ulriothi, Gerwan Isase, Boaden, Armitage Brown, Hailam, Purnivall, Spaiding, Mosetti, Pal-beir order and their origin must continue to be among the insoluble problems of liberature. Believe and their origin must continue to be sets from other poetical works of Shakespeare; I be who said dast they were a "free caped the difficulty of interpretaing the many origins really descring the met of the lead that many origins really descring the met of the fact of the origin of a serving the many origins really descring the not laws of the fact of one-wise the fact of the origin of search they are, the necestable and self-revealing, poems so one with the formation, in the Somes and leaf the Somests to be morely described by the same of the fact or original self-revealing, poems so one with the origin of evidence in connection with the set in one sense Shakespeare's Palays is to be found and self-reve based to order of the own loves and fasts."

Of one thing we are convinced, that the frest in the Somes Shakespeare's plays is to be found set originally considered and educated mind then any enigmatication has been attrek in the case in the worke and be evidence in connection with the capening of Shakespeare's plays is to be found from the sense Shakespeare's plays is to be found for the fact and self-recein and self-rece

"As Lessing so truly says, the artist of geuius contains in himself the test of all rules, and only understands, retains and follows those among them which express his feelings in words. In other words, as genius variee, so the application of rules must be the great the intellectual life and development of a great the intellectual life and development of a great the intellectual life and development of a great grait of or criticise at all that the critic can vindicate his right to be heard as a guide, the sole end of his functions, however he may think of himself."

I, y, 203.

Those are times of dean then the critic returns. Vol.

Bacon and Shakespeare in the Sonnets.\*

or seed the seed of deep thought and of the seed of th

And yet Thou wilt, for I being pent in Thee, four to help to in the perform and in the in the subtility of meaning conveyed in the tour following stanzas, the abruptness of the caseds cand the compactness of expression recanges, and the compactness of expression recanges, and the compactness of expression recanges, and the compactness of expression is and the raded and of the closest state of the closest

Beshrew that heavy that makes My heart to proan Beshrew that heavy that makes My heart to proan For that deep wound it gives my irrend and Me! Ist not concurs Me alone, Ist not coungh to fortine Me alone, But stave to stavery My sweetest friend must be? Me from Myself, and Thee, I am forsaken; A toment infine chinechold thus to be cross'd. But then My Pariend's beart let My past to be cross'd. But then My Friend's beart let My poor heart bail; Thou canst not thoen use rigor in My gaol:

Thou canst not thoen use rigor in My gaol:
Thou earst not thou make high year in Thee, Bettore earn Thine, will, for I being pent in Thee, Perfore any Thine, and all that is in Me.

Perforce am Thine, and all that is in Me.

Sonnes exxxiii.

Nature of the state of the supplies the supplies of supplies o

Sonnet XVII, Lines 1 4.

The will believe My verse in time to come,

and with Your most high deserte?

Sough yet, Heaven knows, it is but as a tomb

high hides Your life, and shows not half Your

parts.

The Sonnets, by the Key used in their composition, are intended to conceal, as in a "Tomb" (from the knowledge of the world), the "tile of the true origin of the dramae attributed to Shakespeare), and "show not half the parts" (show snough to excite the curiosity of the world to know their real meaning, and no more), and so on.

cause "the semblance of the semblance of the semblance of a young man whom he wishes to persuade into an early marriage, that he may thereby perpetuate himself in his posterity, the author urges Thou (Truth) to perform some labor for the world of enduring perform some labor for the world of enduring and Thy, as Thought, continued to the close of the close of the poem, are first alternated with "You," the starts. These imperated with "You," the starts. That alternated with "You," the starts. The the continued to the close of elements of the close of elements of the close of the close of elements of the close of elements. Thou, They be the attributes to clearly is the chirties had streeted to perform in conjunction with Thou the chart of the close of the act of the divided to enturies the careful petuity, pursued through the distinction between petuity, norsued the desired the cathor was to persuade a fleat sevented of the author was to persuade a fusit sevented by an early, However, the Sonnet, object of the author was to persuade a fusit the object of the author was to persuade a fusit to object of the author was to persuade a fusit to object of the author was to persuade a fusit to object of the author was to persuade a fusit to object. They are distingt object of the subor was to persuade a fusit to object. They are dismissed from the poem in the team of the leading object. There follows a symbols of marriage as the production of a child as the production of a child setting the infinite to one in the concilerent here are minited to work together."

In a conciler the the marriage as the cathologies are an immortal than the concent of the concileration of the immortal and of the leading the sevent centh a starsa. Infection of a child as the production of a child setting the concileration of the immortal and of the leading the sevent centh as a child as the sevent centre of the sevent centre are a concentrating the interest of the sevent centre are as a concent of the sevent centre is a child as the sevent centr

J tannos

Shall I compare Thee to a summer's day? Thou art more lovely and more temperate: Sonnet Avill, Lanes 1 2.

Thee (Thought) is compared to summer, but Thou (Truth) will be found "more lovely" (possessed of greater attractions) and "more temperate" (not changeable). The object of Stanza xxxii "is to direct

"By H. L. Hosarra. San Francisco: The Bancroft Company, 1887. Cloth, 12mo., 300 pp., Frice \$1,50.

tase if he bead said, "Now one I passise his sense are all the bead said, "How one I passise his sense are all the bead said, "How one I passise his sense are all the bead said, "How one I passise his sense are all the beat the sense has a sense

the interpretation of Sonnet xii by Judge them.

"Homer,"

"Full authority is given to Shakespeare in the this stance aron minor changes in the thought and expression of the drames as may be deemed necessary. "Those petty wrongs that liberty commits" (the little alterations of adapting them to the stage—your own sense of adapting them to the stage—your own sense of adapting them to the stage—your own sense of propriety and grace). "Thy beauty and to stage the form the stage of liberty commits." Be careful for to belie the truth of the careful role of the stage of thems. Thou (Truth) can easily be "won" (preserved) or "truth) can easily be "won" (preserved) or "sassifed" (destroyed). "And when a woman woose "(the drams, "Interpretation of destroyed). "And when a woman woose "(the drams, "Int Love," are represented as a female throughout the poem,) and sented as a female throughout, is a series.

would not be extracted. The ores would bevoed by would have would be account would be something that \$28 for coest of amelting, transportation of builtion East and refining. Well, \$36 is just what the ores amelted to do not be lorden this year have realized to do here on the Jorden this year have realized to the emelters. For the first monoths of the core of ore, obtaining therefrom 9091 tons of builtion, worth in Salt Lake \$175 per ton, \$1,728,835. It refused the tons of tone or builtion, worth or lead and \$26 worth of sile. That the actoring lead assay of these owning ver was obtained from each ton of these overs was year was obtained from sach ton of these overs was \$20 onnotes. On the ore of the oreal, the actoring lead assay 29 onnotes. On the oreal of the value obtained, \$27 per cent, the actoring the related to the value obtained, \$27 per cent, the actoring the value obtained, \$27 per cent, was lead.

#### The Average Price

He value obsenced. It has to be to the was lead. The better was lead. The house of the was lead of the wind of word of wind of the wind of whe was to be reduced by \$2, and that without the mass of the wind of the wind of we was to be reduced by \$2, and that without the mass of the wind of the was to be reduced by \$2, and that without the mass of the wind of the was to be reduced by \$2, and that without the mass of the wind of ore original of whe was to be reduced by \$2, and that without the mass of the wind of ore original of which was to would never be disturbed ores rises the averset of the wind of ore original or we was to wind ores, yielding a sure if small profit, the wind of the wind or wind

#### The Smelting Business

The Smalting Business

The state average with that of the far three-quarteers of the year, our smelters on the Jordan, valued at \$40,000, exclusive of the Jordan, valued at \$400,000, exclusive of the Jordan, valued at \$40,000, exclusive of the Jordan, valued at \$40,000, exclusive of the Jordan, jordan

year.

With free lead all of this botsi store to be pressed with tree lead all of this business, and all business, must be business must be be bear done to this business, must be severable to the testing the aggregate of \$5,500,000 a year, severa per cent on \$50,000,000 a year, severa per cent on \$50,000,000 a year, severa per cent on \$50,000,000 a year, be Tirsico Astansion of the Dingham, cent. The Stockton, the Tirsico Astansion of the Utah railroads must the Utah railroads must the Utah and the Tirsico Astansion of the Utah of the Utah central, aggregating \$70 miles, and build at a present the Utah and the Utah of the Utah one of \$50,000,000, cannot earn the Utah at a sapenses which lead-silve to one of substantial and substantial and substantial and and the substantial and and the substantial and and the substantial and s

INGERSOLL DRILLS,—The export trade of the longersoll Hocke Lvill (D. o. of this ofty is increased ing, and among the recent orders was a complete air-compressor plant for operating the logersoll power drills at the mines of the Dow-sale—Moyer Gold Mining Co., India. Also for the Dow-sale—Moyer Gold Mining Co., India. Also for the Sancado mines, U. S. of Colombia, Central Americas, a complete plant of dupler air-compressor and Ingersoll Company furnishing water-power, the Ingersoll Company furnishing water-power and Ingersoll Company furnishing over 100 miles on rough roads, on muleback, on miles. This machinery is to be transported such in the complete plant, consisting of air-compressors, power-drills, etc., Scattecas, Mexico. Under the present manes, Pary Poper and complete equipments of every direction, and complete equipments of every direction, and complete equipments of every machinery of the most improved patterns can now be furnished by the company.—Engineers ing and Mining Journal.

FROUGER ROLLING-MILLS.—A dispatch from Riverside, Sar Bereardino county, says: H. M. Ryan of Western Minnesote, connected with the Vermilion range iron operations; J. R. Wilking and R. R. Hunter of Minnesopolis, and other capitalists have purchased a large formed a joint-stock company contract to put up from rolling-mills, to cost \$850,000, on the land, and they have control of a mountain of licon within two miles of Daggett from which to supply the material to be worked.

#### Lead Ores.

The Production of Utah.

ver-lead ores in Utah:

What would be the effect upon the industries
What would be the effect upon the industries
of Utah of a material reduction of the customs
duty on imported lead and lead ores, or of placing them on the tree list? The direct results
can be shown with a near approach to accuracy,
The indirect results cannot be so well stated in
The indirect results cannot be so well stated in

figures.

The duty on imported lead in pigs and bars is dead to what lead is two cents a pound, four-fitchs of what lead the pleas then years. That is to any, with lead thee, it would have been worth in Salt Lake during the past decads, \$10 a ton.

The duty on lead ores is a cent and a half a The duty on lead ores is a cent and a heir their pound, unless they are worth more for their gold and silver than for their lead. In they come in free, abee there is no duty. They come in free, Porty thousand tone of sach ores of all grades admitted duty free, he prince ores of all grades admitted duty free, he prince of lead would be broken down in this country of lead would be broken down in this country of the same as though lead were admitted free. The two products stand together. To make either free in the same as though lead together. To make either free in the same as though lead together. To make of the free in the same as though lead together. To make of the free in the free

The two products stand together. To make it is the standard program, To make it is the standard program, To make it is the standard program of the profit of the two products stand together. The there be be profit in the sendators of Silver Rest, which have this payer turned out 300,000 ounces the silver. The Mannoth, have shipped about 18,000 tone of the silver. The wild be profit as the sendators of Silver Rest, which have this beyond the might wing the wild be profit of the silver. The spiel of this beyond the content of the silver. The spiel of this beyond the content is of the silver. The yield of this beyond the content of the silver. The yield of this beyond the content of the silver should get more than 19,000 ounces. If the silver should get more than 50,000 ounces to show the silver should see the following the silver should see the special of 50,000 ounces and the ounce of the silver should see the special of 50,000 ounces and the ounces and the silver should see the special of 50,000 ounces. The silver should the see the special of the silver should she have content would be settled to the smallers and peace of the silver should the set of silver should she have a silver should she should sh

would still be worth \$10. Let us see how tivide wide.

There is in the business with lead at \$50 a ton to 1 leaf at \$50 a ton to 1 leaf at \$50 a ton and the lead at \$50 a ton a S4 being with lead at \$50 a ton a S4 being with lead at \$50 a ton a S4 being with lead at \$150 a ton a S4 being with lead at \$150 a ton a S4 being with lead at \$150 a ton a since ton a solution, control above that the rate of 90 ton a third word at the lead, and \$4.580, T8 from the lead, and \$6.943,858 from the silver \$68 per cant lead and \$50 once a lay for the lead, and \$6.943,858 from the silver \$68 per company restliced \$4.580, T8 from the lead, and \$6.943,858 from the silver \$68 per ton of ore, and \$6.943,858 from the silver \$68 per ton of ore, and \$6.943,858 from the silver fall to company \$5.80, T8 from the lead brought the company \$5.80, T8 from the entire operation. Lead was worth about the entire operation. It will be one that the own aliver bound at the follow, in other words aliver brought the owners \$1,100,000 more then the silver was to take out now, and lead were on say, the silver would now, and lead were on the free would now only be no dividends, but there would not only be no dividends, but there would not only be no dividends, but there would be a leas of shout \$1,700,000. THE official statement of the ore milled and bullion produced for account of the Con. Cal. Sad Virginis mine in November is received. The sad Virginis mine in November is received. The total number of tone worked during this assumer of the sactorage assay value of \$258,121.54. The average verse yield of the ore in bullion per ton was \$22.01, and the \$258,121.54. The ore income the mine \$26 64 per ton. The ore ontput from the mine lear week was nearly 3500 tone, the puln searys of which represents a verse value of \$32.88 per ton. Which represents a value of \$32.88 per ton. Which represents a value of \$32.88 per ton. Which represents a value of \$32.88 per ton. and they look san if they were good for as much and they look as if they were good for as much more yest."

The Uteh & Montana, Machinery Co. of this ty and Butte, Montana, are general agents of the solid butter, Montana, are general agents of the daily receipt of orders from the various mining. States and Territories, to be used chiedly in the preparation of ores for concentration, for which preparation of ores for concentration, for which making seven sets east to the good with Wales, Among recent shipments were three sets on Thursday last to Sydney, New South Wales, Among recent shipments were three sets on making seven sets sent to that county Wales, the last three acts to the Carlf Wales, Cold-Mining Company, near Guaymas, Mexbed east three mouths; also one set to the Guilf Wales, Dold-Mining Company, near Guaymas, Mexbed east three acts in within the last 30 days.

Breekenridge, Colorado, and one to U. J. Salisbar on the List charles, Mexter of the Ganshorn Mining Company, Custer Dury of the Gram, of the drain 
The Crescent Mining Gompany have had in use at their concentrating works, Fark City, some some of the Well rolls since last May. A Salt Lake Tribuac reporter, knowing this fact, hunter the company, to lear what these rolls are doing and his opinion regarding them, feeling that tast contrasts of my superior regarding them, feeling that such information would be of much interest to such my superior would be of much interest to such my superior would be of much interest to such my superior would be of much interest to such my superior would interest to such my superior would be of much interest to such my superior would interest to such my superior would interest to such my superior would interest to superior would interest to superior would interest to superior would be of my superior my superior would interest to superior would be superior would be superior would interest to superior would be superior would b the obeages for purpose of representation, if the obeages for graphs of the solution is the constant of the solution is solved. The solution is solved the solution is solved the solution in the solution is solved the solution in the solution is solved the solution is solved the solved

out of whet the others do, as more than half of the other than that of the other than the contract the contract the comparative the contract the comparative the contract than the contract that the contract the contract that the contract that the contract the contract that the contract the cost of repairs?

""The Wall rolls is that of a condition, work of contact the cost of repairs that the contract the cost of contact in repairs during the continuous run.

""How about cost of repairs the continuous run.
""How about cost of repairs the continuous run.
""How about cost of repairs the continuous run.
""How about cost of repairs the continuous run.
""How about cost of repairs the continuous run.
""How about cost of repairs the cost us and the wolls. The work the work of the wolls. Then the woll rule cost us and the continuous run.

""How about case sets are seven monthe, there sets of the cost of the cost in and the cost of she will rule. They have not cost us and the wolls. The would nake a cost in the woll of the cost 
"(What rolls have you been using in the "Ill" "(What rolls have you been using it.")

"When the mill was first built it was supplied with Cornish rolls, 16 inches long and 30 inches diameter. When the mill was reconstructed, one year ago, another set the same size was put in, making two sets. Last May we added a set of Wall rolls, which doubled the capacity of the mill."

"How do you have these arranged?"

"How do you have these arranged?"

"The ore first peaces through a rock-breaker, is then soremed and the coarse portions pass accented and the coarse portions pass the set of Cornish rolls, to be sorened and the and the coarse portions pass through the first set of Cornish rolls, to be soreened and he of the coarse portions pass the set of Wall rolls, to be soreened the jige. The "Wall rolls, to be soreened what the coarse world mushed for the set of Cornish rolls and the more than the double what the others do, as more than half of the orbors do, as more than half of itse of the set of the sige."

such information would be of much interest to mining men throughout the conntry. Mfr. Stephenson, on being questioned, gave prompt

"What rolls have you been using in the

The only weed of which history gives account in Elizabeth's time was tobacco. The word tion, was blessed with an orthography which would fill a small dictionary. The following bacs, tobaccy, tobaccy, tobacco, to singiliary, The second syllable was as perfect the state of the second syllable was as perfect the same.

And keep invention in a noted weed, That every word doth almost tell My name—

tion.

tion.

tion.

tion.

tion.

What is the evidence that Thomas Thorpe ever existed? The following entry in the Szioner's Asgister, under the date of May 20.

Szioner's Asgister, under the date of May 20.

1609, is all:

Thomas Thorpe.—Entrd for his copie under the date of Bakespeare's Lownes Warden, a Brok called Bhakespeare's Sonnettes.

By this it appeare that the entry for his copy.

My this it appeare that the entry for his copy.

Itight was made and pale to rownes, Warden."

Alsater Wilson and Master Lownes, Warden."

Whose request they made the entry. No written and the store they were surrections of the Sonness. The preventer of the sonness. The preventer of the sonness. The preventer are correct, Broon contrived the preprietors.

This is hardly probable. It these interprets the preventer of the sonness. The preventer are correct, Broon contrived the plan for their publications, and found in Thomas man of his own creation, the two interprets are correct. Broon contrived the plan from the contrined the plan from the contribution of the Sonness.

Thorpe a man of his own creation, the two interprets are correct. Broon contrived the plan from the contribution of the Sonness.

Thorpe a man of his own creation, the two interprets are correct. Broon contrived the plan interprets are of his enganging The Truth, placed at the close of the son creation, the store in the contribution of the Sonness.

Thorpe a man of his own creation.

Thorpe are of his enganging dedication.

100-17.

The Dedication:

I read the dedication that:

Y. I.H. W. I vishes that etentity promised by our even-thrug poet, to the body the othy objecter of the best end all begieter of the begieter of the outproses to the begieter of the consults grounded and represented by the consults and the begieter.

Thou (Truth) is oleimed and represented by the colors of the poet from the commencement to the close of the poet from the commencement to the close of the poet from the commencement of the poet from the commencement of the poet from the commencement of the commencement

The Dedication.

furnish a few veriations: Tobaco, tobacoo, tobacoo, tobacoo, tobacoo, tobacoo, tobacoo, tobacoo, bacoo, ode as a perfect the area of the second sylable was as perfect the as now.

"In every form which spelling gave to tobacoo, it simost told the same of Bacoo, The decendence of the true origin of the dramas of Salakespeares life, canot by their author and published mearly three conturies sgo, during Salakespeares life, canot by any force of logic or ingenuity be destroyed. It is unargument the salakespeares life, canot by any force of logic or ingenuity be destroyed. It is unargument able. It imparts the he force or truth to this entire sgo, during the history, and relieves it of the argument in the history, and relieves it of the continuous mands of the requirement of the content of the second be constructed which would savoid that conditions on the constructed with the lines preceding of the Toledo Stude, has and the originator of the most interesting and valuable treaties. It is most interesting and valuable treaties. It is most interesting and valuable treaties of the most interesting and valuable treaties. It is most interesting the savoid shading the preceding piece without a river or all the originator of the most interesting and valuable treaties. It is most interesting the and the originator of the preceding piece without a river or all interpretations to Eastern or the construction the Californ is purpose of comperison the californ is burden to a compart of the construction will be extended through this latest as it has been by other works issued this latest as it has been by other works issued by the house of Banctot Compensor.

Within Bances and the Sonets Hodson.

Weby.

Key,

By Judge Hosmer, to the Sonnets, known as
Shakespeare's:
Thou and Thine—Impersonation of Truth.
Thy and Thee—Impersonation of Trought in the abstract.

Yourself—Impersonation of Beauty in del meation.

Yourself—Impersonation of Beauty in del meation.

We have in the contract of Baccon as nuthor.

My Love—Impersonation of The Dramas.

My Love—Impersonation of The Dramas.

My Mark and the Dramas in the Contract of the Dramas in the Contract of Space Thyself—Impersonation of Thought in delineation. You and Your—Impersonation of Beauty in the ab-act.

Petroleum Fael and Storage.

ommended for adoption by the Fire Department Committee of the board. to the fire ordinances has been drafted and recwere to be put in; and they wanted also different figures for the "fire teet" from what the underwriters desired. These differences, how-over, have been arranged, and an amendment garaisain trom the supervisors each time tanks The oil-men wanted the ordinance to be general ris terms so that they would not have to get to be amended by the supervisors of this city. quantities. The insurance men and the oil-men have been discussing the matter for some time, in view of the fact that the fire ordinances were ni egarota ati to tadt ai seitio egraf ni eonatadua stead of coal for the past year or more. One of the questions connected with the use of this used for steam-making purposes, and in San Francisco many establishments have used it infurnaces is very largely increasing in this State. In Southern California it is very extensively. The use of crude petroleum for fuel in boiler

writing of the location and purpose for which the petroleum is to be used. fire marshal, and the Board of fire wardens in facturing and mechanical purposes, must notify the chief engineer of the Fire Department, the this fuel for generating steam and other man lons in quantity to be stored in a brick, iron, or stone building not over one story in hight, and devoted exclusively to the storage of petroleum and its products. All firms which may keep this from the storage of the storage of petroleum This ordinance requires all oil over 100 gal-

mable vapor which will ignite upon contact 08 nast seet ton to eturamenta a bratadiw ot -mefini na time lliw ti eroted tiednerde Reergeb This petroleum must be of such a quality as

with a shut-off cock, so arranged that steam can beitgqua ed flada seqiq-maeta doidw to dose with the supply-tank and the storage-tank, Steam-pipes shall be placed connecting the boiler .maeta gaitareag ai faul za eau etaibeammi bas fautos ai toa si lio edt nedw semit lfa ta bna yab dase arow to esolo edt ta anat-egarots oil in the supply-tank shall be returned to the nected by a pipe with the storage-tank, and the visors. The supply-tank must be of iron, and only be of 100-gallon capacity. It must be placed on iron supports outside the building. Where a supply-tank is used it shall be conmasonry. Only one tank shall be at any one place, unless by special permission of the Superbe surrounded by at least two feet of earth or iron storage tanks shall not have a capacity exceeding 1000 gallons, and they must be buried so that the top will be two feet underground, and Except by permission of the Supervisors, the

the purpose of examining and testing the sa these parties may enter upon any premises where crude petroleum is stored or used, for the use of Tagliabues' open tester, and either of to be made and the quality to be determined by either the ohief engineer of the Fire Depart-ment, the fire marshal, or any fire warden of the city and county of San Francisco, the test tested and its quality determined by tank through the steam-pipes at any time. It is provided also that the crude petroleum be turned into the supply-tank and storage-

dry was caused by this liquid fuel, but this law, they can go on and use the fuel. It was at free thought that the fire at the Fulton fourtheir tanks, etc., are arranged according to the will not have to await the pleasure of the Supervisors to put in an oll-burning plant. They must notify the officials, but provided It will be seen by this that the manufacturers and determining whether the requirements of the ordinance are being kept and fulfilled,

darving plants will de put up in this city in the manufacturing districts. in price, it is probable that many more oilwas not the case. Tanks of oil were found in-tact after the fire, not having burned or ex-ploded. As coal is getting searcer and rising

already called upon to do. made necessary by the amount of work they are machinery and power in order to at least double their present capacity to reduce ores. This is will at once proceed to the erection of further IT is rumored that the Reno reduction works

. gainanr Litaete The promising camp of Pike City is well populated. The Alaska company employs about 120 men and their 40-stamp mill is con-

191

Jee W bit A edt in ThusdanH rets W

partial and in others complete. mills, the failure having in some cases been nsufficient supply of water for running their motive-power—now, quite a numerous class in California. For fully three months during the past season these miners have suffered from an The late somewhat protracted drouth, while it has favored river-bed operations and caused no great inconvenience to the gravel driffters, has worked some defriment to such of our dustra minets as depend on water for their months.

.elliar Yasa sequent on the stoppage, partial or entire, of so bed claims not compensating for the loss co there must ensue a considerable shrinkage of our annual bullion production, the increment resulting from a longer working of the river-From the hanging up of so many stamps

Sierra arrests, condense and retains moisture bas to meet all requirements present and thing like a famine or even a shortage of water in these mining districts, nor, indeed, in any part of Central or Morthern California, The would be unintermitting and ample for the wants of all. There should never occur anyti tant noitudirteib ati exilanpe bas ylqqua edt this surplusage against time of need, a plan which, effectually carried out, would so enlarge done, where feasible, is to gather up and hold Sierra Mevada, always water enough, with quantities immeasurable at certain seasons of the year running to waste. The thing to be There is, in the mining districts lying slong the general recourse to water atorage, building, where practicable, reservoirs for such purpose. of the frequent occurrence of these seasons of drouth, might find it expedient to have more Tt seems to us that our quartz miners, in view

storage as this, resting on the westerly slopes heat reason to be thankful. Nowhere in the world is there another such aystem of rivers, and paring such pure and parametel feeders, such a training such and feelilities for water and feelilities for water and feelilities for water and the such and the such as the such -sterg edt eved ew doidw rot gaidt edt ei resttends, but where it can do no possible good.

Next to our soil and climate, our wealth of too direct return to the sea, to which it ever

prospective. The great problem is to check its

.abaveM arreiS edt 10

been deemed worthy of public sid and protec piscioulture and like interests that have justly ject of quite as much importance as forestry, due a taeW et the shrid lands of the West a sub right direction. Water husbandry is to the eligible sites for reservoirs, is a first step in the Senator Stewart of Nevada, providing for so for sold for sold of the setting apart of bill introduced in the United States Senate by end utilizing this water is now in order. The Raizimonoos vol sernesem eldetius esiveb oT

many different mills. mines, it can be employed as a motor more than se mi squass of stee sets of stamps in as with the fall available in most parts of the irrigation or other purposes. Not only so, but dred years. Having done service as a mill-driver, the same water can often be used for trees, that can hardly be reproduced in a hur forests. Five miners' inches may be made to do the work of an engine the propulsion of which will require daily half a dozen stately motive-power tends to the conservation of our a as masts tot tetaw to noitutitedus edT

health, comfort, and enrichment. the simpler element of water contribute to their her people a rich inheritance, hardly less will While the equable temperature, the pure air, and the rich lands of California will remain to

вид гевите орегайсив. proceedings have been suspended for 30 days to enable the company to pay the claims Further .72,840,81\$ guitegargge amus rol filed in the Recorder's office at Eureka against the Star Mining and Smelting Oo. of Union Тне Епгека Sentinel ваув liens have been

side of Mevada county. New supportet works costing \$20,000 have recently been erected. Movember. The mine is scarcely known out-THE Delbi mine, in Mevada county, paid its 10th dividend of \$10,000 on the 25th of

Arizona for the first 11 months of the current year is \$646,136. No dividend has been paid since tast July, though up to that time a round \$2,000,000 had been given to stockholders. THE product of the Silver King mine of

The Bonanza Era not Alwaya Best.

Lowdon Aceur—Arran E. Ann, 63 and 64 Mew Broad Street, E. C. oon to become so in reality. betoegxe to enoitsnigami awo sid ni doit aaw hardly anywhere a house to let, Every one a plethora of people in the mining towns, but came suddenly and unduly inflated. lands, and, in short, property of every kind, personal and real, tangible and intangible, bevalue. The prices of city lots, houses, farming Money was invested in mining abares without thought, inquiry, or stint, millions having been expended tor stocks that never had the slightest ern Nevada, and indeed of the whole country. towns along it, but also in the future of Westthat it would be kept up for an indefinite period, everybody became confident, not only in the inture of the Comstock lode and the Ten to twelve years ago the Bongaza, mines on the Cometock lode were making their largest production of gold, and either. Excited, by the production of gold, and either gard expecting

were who cared to pay taxes on unproductive property. Wever before did a community march so directly from fancied wealth to actual ings, stores, and other husiness places were vacated and stood empty, half of Virginia City being for sale or to let. But there were no tenants and no buyers. Comfortable houses could scarcely be given away, so few their west who extend to nay takes on mysterials. seemed to have fallen out. Business declined; ore bodies would be opened up in depth. As this hope died out contraction began and kept on till the whole bottom of the thing shrinkage, everybody trusting that other rich to seturnol edt in rut etanatorunes of ster this unfortunes of the ster works selles blo ede did values ster much product of bullion. But not for a time -nietdo os sgnidt to noitibnoo edt sudt baA ot asyed seibod ero gid edt llit bled gai ni To gnillet biger a benene eredt bas "reted",

calations of the real estate owners and business men on the "Eastern Slope," and yet, knowing now extensive are these low-grade reserves in ment of bonanzas enters no longer into the calsoe to any such contingency. The developthe expectation of ever uncovering another phenomenally viol ove body in these mines has been abandoned. No one acts now with in the future of the Comstock mines has been considerbly strengthened, notwithstandings prices generally have improved, and confidence branches of business have begun to pick up; MIGORIA ANGOUS.—Busons and MIGORIA ANGOUS.—Busons and the Bonnets, 408. Wall Rolls for for Crushing; Lead of the Bonnets, 408. Wall Rolls for fore Crushing; Lead of Sea 408.

MEGOLANIOAL. PROCRESS.—Sode Begins and the Bonnet of Sea 408.

Engine; The Early Saxons as Metal Workers; Welding Wildsel of the Bear of Sea 408.

Engine; The Relative Saxons as Metal Workers; Welding Wildsel of the Bear of Sea 408.

Engine and Acediant Power of Metals and Present to the Sea 408.

Engineering; Rails of Milesey of Metals and Present Engineering Open Seath Orens; A Bear of Metals and Present Engineering; Rails ad Milesey of the Processing Medium: Engineering; Rails ad Milesey of the Processing Medium: Engineering; Rails ad Milesey of the Medium Engineering; Rails ad Milesey of the Medium Engineering; Rails ad Milesey of the Medium Engineering; Rails ad Milesey of the Processing Medium: Engineering; Paris and Metalschiptus, 400.

Engineering; Rails ad Mileses of the World; Occupant of Indian Medium Engineering; Rails ad Mileses of the Processing of the Engineering; Rails ad Mileses of the World; Occupant of Indian Medium Engineering; Rails ad Mileses of the Processing of the Engineering; Rails ad Mileses of the Processing of the Engineering; Rails ad Mileses of the Processing of the Engineering; Rails ad Mileses of the Processing of the Engineering; Rails and Mileses of the Saxon of the Medium Engineering; Rails and Mileses of the Medium Engineering; Rails and Present of the Medium Engineering; Rails and Mileses of Medium Engineering; Angolium Enginee made and economies effected. The bullion product also grew, little by little. While these things have been in progress other power, and various other improvements were was largely substituted for steam as a motiveincreased, some new ones were erected. Water after another started up, and, as ore extraction force was augmented; the idle mills were one the large masses of low-grade ore left in the apor apper levels of the mines. Gradually the labor re through deep exploration, began extracting which some signs of improvement began to be visible. Meantime the leading mining com-panies, despairing of inding rich or even pay This downward movement, so begun, having gone on for several years, affairs reached at last their point of greatest depression, after poverty as these dwellers on the Comstock

There is a great scaroity of both coal and lumber at present. Coal has advanced in long enough to bring enrichment to the few and impoverishment to the many. rence of these occasional rich strikes, which, creating an unhealthy excitement, last only some time past. French syndicates are trying to China, something we have not been doing for better for the people at large than the occurnia has again commenced to export quicksilver questioned if the development of large masses of low-grade ore, so it be rioh enough to give employment to large numbers of men, is not rislly in price of late. It is a fact that Califor-It is gratifying to note that not only copper but lead and quicksilver have advanced mate-Pondering the foregoing facts, it may well be the other industries of Western Meyada. States. It will specially benefit San Francisco

with the future not only of mining, but of all

the Comstock ore channel, they are satisfied

onths of 1887 the product was \$621,500, or per cent of the gross amount. For the first five stockholders received \$9,076,866, or nearly 50 of 15 years, was \$21,841,000, of which the THE El Callao gold mine, in Venezuela, is producing about \$100,000 per month. The product from 1871 to the close of 1886, a period

on Friday night. in this State after the first rains have been The water main that supplies the Providence compelled to shut down again owing to the mine with water was blown up with dynamite scarcity of water. Miners, farmers and every-

\$104,300 per month.

CIENTIFIC BEEZ MINIME

DEMEX & CO., Publishers.

Terms of Subscription. (S. New aubscriptions will be a cubertptions will be a clearly subscribed to the cash in advance. All arrearges must be paid for at the rate of \$3.50 per annum.

body wants more rain and plenty of it.

gu betrata twoda allim-ztraup edt to smo2

bailding purposes in Southern California and the general growth of the towns and cities of California, is causing the need for lumber.

coast mills, but there is a scaroity of vessels to transport it. The great demand for lumber for

turned out in immense quantities at all the price and is still going up. Lumber is being

to control both the copper and lead markets.

this road is a very important event for both

a large number of people. The completion of

with appropriate ceremonies in the presence of

The driving of the last spike on the railroad connecting California and Oregon was done

Passing Events.

Business Announcements,

we call of the cal

Merry Christmas, 405.
MISOFELLA FIONB.—Workingmeh's Hones at Mulbrores, 401. Amentean Blast Furnasces, 405.
MISOFELLA WEIGHTS.—Bacon and Shakespeare in the Sonnets, 408. Wall Rolls to tore Crushing; Lead

EDITORIALS.—The Copper Market; The Advance in the Bonaroz Era Zot Always Best; Water Busbandry. The Bonaroz Era Zot Always Best; Water Busbandry in the Arid West; Petroleim Tuel and Storage, 4Od. Dam and Reserving Construction; Blast Furnaces;

TABLE OF CONTENTS.

Saturday Morning, Dec. 24, 1887. SAN FRANCISCO

SCIENTIFIC PRESS PATENT AGENCY.

Entered at S. F. Post Office as second-class mail matter Our lakest forms go to press on Thursday evening.

Address all literary and business correspondenging Drafts for this paper in the name of the firm,

DEMEY & CO., PATERT SOLICITORS.

merchants and manufacturers.

sar Bee Advertising Columns.

Ingersoll Rock Drill Co.—New York. Dividend Motice—S. F. Savings Union.

Advertising Rates.

Office, 220 Market St., N. E. cor. Front St., S. F.

#### Merry Christmas.

word, that gives to every man or woman, however bowed down with cares and burdens of step blue sky. It would be a strange Ohisetmas that failed to send a ray of basiness of the day consists in devising pleas-ant surprises for children, relatives and friends. More than that, this day is the rift in the debate, and the North and the South shake hands. Even capital and labor, wealth and poverty, cease to show their teeth. In short, everybody is happy or tries to be, and the and turn their attention to gift-making. The white flag hangs all along the line of 'party members forget their bills, committee work, eses anopping with his wife. Congress ebedsinguisibe bad strave senators The President quits work and and keepsakes. ealing gaisedorng atseats and gaords acitalugoq fore Ohristmas, when the bulk of the adult spectacle the country presents a few days benade of giving and receiving gifts, made more fragrant and beautiful by the the thought of the the more than the m to all, old and young, rich and poor, the happy helping some one size to have a good time. It is mi ai yab propose to have a good time, to enjoy them-nelves, but the true spirit of this day is in angel song of peace and good-will. For the most part, those who observe other holidays Ohristmas above all other days is the festival of unselfishness. More than any other day the bearts of the people are stirred by the

the heart is almost unknown. In fact, we are fallen as a pall, and to whom the joyoneness of hollow sound. The American people especially are a sad, nervous race, upon whom work has words " A Merry Christmas" have a strange, have a season when we forget to the goal of the stife, and ambition, and money-getting and the despotiem of fashion, and money-gettings and the despotiem to be the sand money-getting. Perhaps at no period in the world's history was the inspiration of a festival like Christmas more needed. This no a festival like Christmas more needed. This have world with our better nature, Already the world when the statute. Already the world "the deliver the statute our better nature. prongh of series and sorrows at bests. Agnorate, can they who, even for a few fleeting momentes, and estimates, and seeing the series, and the series of the numan sunshine to every heart. Let us be thankful this is so. Life is full

both combined may prove a curse it is the fragant we are about to post the books of our failures and successes, it may serve to remind us that wealth or position is not all ife, and that Christmas does near the close of the year, when Such thoughts as these may sweeten the asperities and restore the fading picture of innocence and ideal blessedness. Coming as ing, when the human race, panting and foot-sore, will at last reach the goal of happiness, long ago, its prophecies of the good time combrate properly the few holidays we have, been brate properly the few holidays and make them seasons of rest, joy, and pleasant remmiscences. Especially should we remember Christmas, with its religious suggestions, its lessons of charity and brotherhood, its memories of the charity and brotherhood, its memories of the

concentrates are quite clean, and the last test aboved but 8 per cent of silics, — Georgetour was to concentrate eight tons into one. enob saw tant the best that was done and with results highly satisfactory. An average of five tons of ore is put through in IS hours, and six tons, or a fraction over, is concentrated into one. By the precess heretofore centrated into one. By the precess heretofore residuals and a shout the best that was done tried on this ore about the best that was done tables have been used upon the Centennial ore, simple in use, essily attended, and not likely to get out of repair. For some little time the the tables. The tables are probably the most oally, and from thence is carried by water to fed from the crusher into the battery automatiis necessary to attend to the work. The ore is are stamps, and a crusher, the power being fur-nished by a water-wheel. One man is all that ful, both in the work done and in an economical point of view. The machinery used consists of two Black Hawk tables, a battery of Clear oreek mill appears to be the most successmany concentrating plants that have been put in operation in Colorado, that now in use at the SUCCESSFUL CONCENTRATION. - Among the Hower of duty slone. In this spirit we wish all our readers, friends and patrons, and enemies, if we have any, a Merry Obristmas.

#### Blast Furnaces,

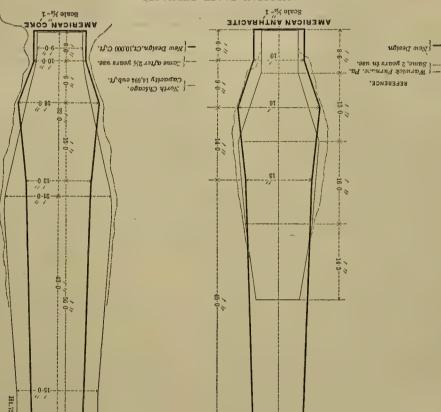
that level the walls have been more or less pro-tected by the adbesions that were donbtless above or just below that level, showing that at gletaibemmi sad it as wear doum sa bereflus eb wer est to send than senil ogeoido davo More sed ecemul eds redo done toestoring agin new design, they very nearly conform with it; it will also be observed that where the original furnace and as far as the top of the bosh in the edt to trag rewol edt ni yawa tue esail lani ing the difference in the lines will be readily appreciated. It will be noticed that the origtwo and a half years, making mearly 100,000 tons of pig-metal in this time. From the tracstructed, and the lines after having been us North Obicago furnace as originally conpractice. One of the engravings (the coke furnace) shows the new design, the lines of the show the application to the American coke paper on 'Irregularities of the Blast Furnace Process," in the cuts one of the North Chicago furnaces is compared with the new design to In continuing our extraots from Mr. Walsh's

vation to supply the water to large areas which may need irrigation, or for other purposes. bight as to produce any desired pressure or elewoirs at pleasure, the upper one being such a small comparative expense for dams and reservoirs, and it may be used from any of the resera ta ti nister bna retaw to ybod egraf a toel to a minimum, and as fast as the water is drawn down it is taken off eltogether. By this system the inventor expects to be able to col-By this duit so as to supply different elevations. By this system the pressure upon the walls of all the dame except the lower one will be reduced Each dam has its separate service pipe or conheitgen need eved srievreser ets fla litan no fast as drawn into the successing one, and one into the next below, being discharged as the gate between the two may be left open, and water will then be drawn from the second that below. The presente upon the opposite bins of the dam will be entirely equalized, and

reservoir until the water reaches the level

neque add morl tenn mean ad liw ti bean ed brought apon it. Water having been collected in the dame until they are full, when it is to

.woled sads



#### AMERICAN BLAST FURNACES.

cut off by setting in its stead a permanent and firmly-laid firebriok scaffold that will remain in ai bled stoots trace or the inert stoot hold in position by wedged stook or scaffolds. In other words, that portion of the furnase steets is test is steet is steet is and materials at the trace out off the trace is steet in the steet and materials at the steet as t ore worked at the above mills during the week, according to the battery samples, was \$33.17, Bullion valued at \$30,000 is now on hand in that portion in which would be contained the and, in view of what has been explained, it will be seen that they cut off from the furnace strength needed is only sufficient to resist the tornis mill. The average assay value of all the lines remain inside of the original construction,

has been cut sway by two years' use. The best has been cut sway by two years' use. The best six months' work in the previous history of this furnace was performed on these very lines. From the top of the bosh it enters the worn furnace, and cuts off that portion which has doubtless given Mr. Cook so much annoyance in the shape of ''dirt-troubles."

reached by use, and follows the bosh where it

to show its application to anthracite practice.
The Warwick furnace is taken for comparison,

the new design is compared with the Warwick

position and will not constantly threaten the

process with disaster,

In the engraving of the anthracite furnace

This trained is unusually low and deserves great from her teller prest or total for the lead from her teller great or difference of the authracite region. The new design would enlarge the heavth (by au unintentional coincidence) to the dimensions according to the discussions according to the discussions and follower the discussions are present in the difference of the discussions and follower the discussions are the discussions and discussions are the discussions and discussions are the discussions and the discussions are th merits. It will have but little bearing on Judge Hosmer's book, but in matters of detail it may to bessed ed Hew aso notation on tedt of Shakespeare." The work by Ignatius Don-nelly has not yet reached the Pacific Coast, so of Delia Bacon and Judge Holmes' "Authorship an apology to our readers for the large space given the subject in this number of the Perss. Two American works lead the controversy, that terest at present attending the question of the authorship of Shakespeare's dramas—the Amer-icans' heresy it has been called—must serve as SHARESPEARE'S DRAMAS.—The unusual in-

cars for supplying Southern railroads. Decatur, Ala. This company will employ over a thousand men in the manufacture of railway move its immense plant from Urbane, Ohio, to THE United States Rolling Stook Co. is to re-

THE Bolivian bark Remijio, Captain Wall, arrived this week from Hakodate, Japan, with

Dam and Reservoir Construction.

In many parts of the country and especially osaru qeeste in veter in gaivas bas gaibanoq-ilacol ralimis redso ni bas sellev to esseruce -mi to esoquuq edt tot bas noitsgirti lo meteys W. R. Strong, of Los Angeles, on a method of construction of dams and reservoirs. The dams or reservoirs are to be employed in a curred, however, in this State, and a patent was received this month through the Mining And Scientific Paess Patent Agency by Harriet field of engineering. A case of this kind has on-It is not very often that ladies become inventors, and even when they do it is very excoptional for them to invent enything in the

designed a system whereby the water may be Consolidated Unging the rainy season and held for the Colifornia and Virginia mine 1047 tons of ore the land for its distribution over the land for its. hours. These valleys and water-courses rarely have any extended beains which may be need as reservoirs, and Mrs. Strong has therefore wel a nidtiw teol ei bne segasse bne vibiger theory of the secopasa parest contract countries the second that the second th able, and it is very difficult to collect and save those where long rainless seasons occur-as in Southern California-water is exceedingly valu-

like manner acts as a support for thet, dam has been filled the water in the when the water has all eath about a of qu bash so liw i man involved a ost a new leaf and a light a leaf determined by the steepness or in-olination of the channel. The dis-cance between these dams is such ed yam as trags seensteib dous ta behind the other in the water-course or valley, or channel, and rigating purposes when desired. In carrying out this system Mrs. Strong builds a series of dams one

the water at the same time backto discharge.

In illing the reservoirs the water in filling the reservoirs the water is allowed to pass through the gates of the upper dams into that lowest one until its reservoir has been filled to the proper hight, and so on for any number of dams which it may be desired to use. The dams are provided with gates

dams below acts as a support against their lower faces, and the pack pressure of the water in the aure of the water, because the were to sastain the whole presthis construction the inventor claims the upper dams may be made of less strength than it they the uppermost of the series. By and partially filling its reservoir.

Its gate is then closed, and in like manner the second lowest reservoir is filled, and so on to The series.

Experience of the series. evods mab txen edt taniaga qu gni

dam, having no back presence, must be made the strongest of all. water above and below the dam. The lower

piles may be fixed. each other with cables or rods to join them. Above the apper walls one or more rows of anchors being carried up the stream, Another method is to have the reversed arches crossing upper one in a straight line, the chains and lower dam is in the form of an arch and the tached to anchors which are firmly fixed in the banks of the channel. In another form the material. At the ends, these chains are at being preferably supported by sassing through noises drilled in the blocks of stone or other the walls, chains pass around the convex faces and united by rods or chains extending from one to the other. To still further strengthen center of the dam. They are laid up in cement the keystones of these arches standing about the arches, with the convex faces toward each other, stone. These are built in the form of reversed dams may be employed. Among others the in-ventor instances dams formed of masonry or Various forms for the construction of these

and will resist any strain which may be | 5253 bags of sulphur. . Mrs. Strong olaims that by this construction she can produce a dam which has great atrength

Photography of Invisible Objects.

## Scientific Progress.

Progress in Electrical Solence.

At no period in the bistory of solence has electricity commanded such general attention to electricity commanded such general attents to accomplish its practical application to the wants of man command more of the attention of scientists and inventors than any other line of shought or research. Although the progress in regard to its practical uses may appear slow of thought or the procession of the progression of the progressio

Mr. C. Zenger has lately made an interesting to the content of the

in the Movel's industrial these to the country and processes of thought to research. All these the progress of thought the progress of thought the process of the country of the country of the process of the country o

COMPOSITION AND HEATING POWER OF MATCH.

COMPOSITION AND HEATING POWER OF MATCH.

Composition of the equator, and marsh gas, with cocasionally and seven in the specific gravity, from 45° to 55°, and seven in the same well at different times.

The average composition of the Pittsburg past.

The average past are all past contains the past contains a 
A BARREN SPOT.—So varions are the forms of plant life that it seems well-nigh impossible of plant life that it seems well-nigh in do that it such a short well and of vegetation will not thrive. Mr. John Ball, a naturalist returned from South America, therefore congerturated through on having seen an absolutely plantless land at Tocopilla, about 22 degrees south of the equator, on the rainless west cosat. Not so much as a lichen could be discovered on the rocks, even with microscopic aid,

Cooling of the Earth Creat,—N. Faye, the well-known French astronomer, has drawn the well-known French astronomer, he French Academy of Sciences to the apparent geological law that the cooling of the terrestrial orrust speed on more rapidly under the sea than with a land surface, Hence he argues that the crust must thicken under onesns at a more rapid must thicken under onesns at a more rapid first and so give rise to a swelling up and district and so give rise to a swelling up and district of the thinner portions of the crust—in other words, to the formation of mountain chains.

ACTER AS A HEALTING MEDIUM.—Holy WATER AS A HEALTING MEDIUM.—Holy water is put in motion by heat, and as hot water passes round the circuit, it gradually bartes with its heat through the pipes to the surrounding air. The great specific heat surrounding air. The great specific heat of caloric, adapts it holds a large quantity of caloric, adapts it well for the transportation of this sgent; and as it parts portained in the holy portained in the holy contained the strength of the strength of the carees of warnth, it is well also to observe the external air; the higher the host surrounding the strength of the excess of their temperature above the external air; the higher the heat the more rapidly it passes away. Large quantities above the external air; the high class windows. Window panes radiate the heat outward, and windows.

Window panes radiate the heat outward, and windows.

It is nonducted away by the external air.

in this country"—the ""the illustrious waremiths overcame the Welsh, and, grasping huge
weapons with hote hand, anquished their
toes." Both war and agriculture want the
toes." Both war and agriculture want the
toes of the Anglo-Saxone was that of the smith, whenever the trouble, so says Turner, to describe the
taken trouble, so says Turner, to describe the
to the heating hammer, and the right hardness
of the heating hammer, and the right and various
flowing tongs," and to remark that the gembearing belts and diadems of large, and various
colled "iser amith were made from the gloon
of iron. The smiths who worked in rion were
laisting wanter the scolleramith (alrocaments of glory, were made also the
colled "iser amith or copperamith. In Sixon
of iron. The smiths who worked in rion were
laisting wanter the scolleramith (alrocamith)
and the armith or copperamith. In Sixon
colled "iser amith or copperamith. In Sixon
and the armith or copperamith. In Sixon
plowman or the good but from my art?"
to made to say, "Whence the sempetress a
needle, but from my art?" to which the reply
seed to the the sempetress as an, or to the
needle, but from my art?" to which the reply
seed to the defermance of the debenman are angle, or to the
needle, but from my art?" to which the reply
is green. "Those in my smithery only give us
to make spark—the noise of besting lammers
and blowing bellows." Smiths are intequently
mentioned in Domesday.—The succepter.

Wenner of the succepter.

week in the case of the states 
TEMPERING STEEL.—A technical writer says:

"There are a thousand and one things you could not beach a man with a thousand and one things you could not beach a man with a thousand and one the sand are a the sense ariser; it a sliuding to the temperature which is required in hard and could not should be seen the temperature for the sees! we ware a sea the sense with the temperature of a finished worker hardening and temperature of a finished worker hardening and temperature of a finished the sach temper of a finished body are successful to a successful the sach temper of a finished backers." It seems to me the low-sach beach the temper of the required hardenses." A propose to the above, the required hardenses." A propose to the above the sach temper of the required a striker says: "It seems to me that the consider writed a fartes with a storing would not seems to be no effective way of getting water to some cooling has we cought to the mast to be not deficitly on the tools are done to some of dropping water on the consider the mass to be not see of some of dropping water on the outside showe the tool as the metal, therefore the common cut-turning wrought iron, the point of the tool is betting water in seems to be not be seen of the out where the tenderneach the surface of the cut where the tool is acting, and the only way to get at this is to force the water in a fine jet from the underside."—Journal of Progress.

A New Compound Locomorive, The master mechanic of A New Compound Locomorive, The activities and the fitted that the compound become been a compound locomorive which is said to give considerable promise of success. The cylinders of an ordinary locomorive are made use of as low-pressure cylinders, and others placed in front of these as cylinders, and others placed in front of these as the bigh-pressure cylinders, Means are worked from the same rocker-arms. Means are protoned for using steam direct from the boiler to the low-pressure cylinders, dispensing with the the low-pressure cylinders whenever so desired by the engineer, thus making it, in desired by the engineer, thus making it, in at will.

MECHANICAL HINTS. — Many a device is "Veod practice" nutil adopted and made "" yood practice" by some shop whose work is acknowledged as "bandard." In some sections a "weighted engine" lathe is considered an abomination, while in others it is the favorite abomination, while in others it is the favorite times perfectly effective devices, methods of construction far better than those in use, cannot be adopted for commercial reasons. They are too far in advance, and it costs too much too about the public up to an appreciation of their merits. One may lead the market, but it may do to to many and it is in advance, and it is the must design and construct to suit it as it is. means for the entire of the entirone of overwards of the overman dialogue, and the entirones of the overman dialogue, but the event of 
THE Early Saxons as Metall. Workers.—
There can be no doubt but that we are indebted to our Saxon forefathere for excellent workers indebted to our Saxon forefathere for excellent workers we have the counting in wrought meetal work. From the ingeneration of examples we have profited, for my samples we have the workers of shome were introduced from Mormandy, but smong that "they had effectively rolled upon soft select plates, which we have the records showing that "they had effectively rolled upon soft select plates, which had faile those that have been commonly used a first those that have been commonly used the records showing that "they had been commonly used and faile and faile and faile those that have been commonly used the records showing that "they had been commonly used the records showing that "they had been commonly used the records showing that "they had been commonly used the records showing that "they had been commonly used the records showing that "they had been commonly used the records showing that "they had been commonly used the records showing that "they had been considered the records showing that "they had been the records showing that "they had been the records showing that they are the records showing that "they had been they are the properties" the records showing that they are the records showing that they are the records showing that they are the records showing the same that they are the records and they are they are the records and they are they are they are the same that they are the same than the records and they are they are the same that they are the same that they are the same that they are they are the same that they are the same than the same that they are the same that they are the same than the same than the same that they are the same than the same that the same than 
MECHANIGAL PROGRESS.

Soda Engines—The Philosophy of Their

The following appears in Wood and Iron, a technical paper published in Minneapolis, in Minneapolis, and be of sods in the following appears in Mood and Mood and Iron, concerning the streets are published in Minneapolis are beinger in that tity.

Some of our cotemporaries are publishing as are being run on the streets of Minneapolis because the law forbids the area of ateas are periments were made with a so-called sods engines.

During last winter and early spring some experiments were made with a so-called sods engines. These sods engines were work manual and the sods engine are triply a stranger of more than 250,000 in a viring strain out of difficulties. These sods engines were about the sold of the sods and worse workmanthy. And worse workmanthy.

The sod to make the failure was due to the triple of the sods of sods, but to poor management, bad designs, and worse workmanthly.

The strain and worse workmanthly.

Strain and worse workmanthly.

The strain and has the property of condensing the steam itself. The strain and worse workmanthly.

The strain and worse work in the sods and worse work in the sods are received thom the strain the strain transporters the sods will near the former than the strain and 
COVERNOR FOR STEAM ENGINE, -A nOVEL

trailly it will not generate any more heat after the at all, at all, at all, at all and the solar and a condensed at the trace of a certain chemic cal action within the soda itself. When the soda itself, which is some become saturated it must be used again. The regenerating process before it can be used again. The regenerating process before it can be used a spain to run the ordinary entries more beat that to run the ordinary entries more the start and a condition of the soda motor is not economical.

The advantages to be derived from a soda mober or steam is allowed to escape. It may be be in the fact that no fire is used and no rates to any place where the streets, in tunnels, or steam would be especially objectionable.

In the soda motor experimented upon here, the boilers were designed to lurnish steam to erases the size of the cylindral, which they decided to use low pressure and investment, increasing the boiler capacity. Hence the boiler were designed to lurnish atternance or any high pressure to small cylindrae, but they decided to use low pressure and increase it is not the difficulties and chose of the soda motor and regenerating the bridge the soda from the this the difficulties and regenerating of time.

In addition to this the difficulties anrrounding save endless trouble, so that the upshot of it in the contine of the difficulties and regenerating of the soda where the continual control is all that had been done.

hydrogen, 3 of nitrogen, 5 of ethylic hydrate, I do dolefnet, gas and the remaining 2 of oxygen, and other profits gas and the remaining 2 of oxygen, carbonic cacid, and carbonic oxide. The gas found at Findlay, O., another prolific gas-field in the northwestern portions of that State, analyses thus: Marsh gas, 93, nitrogen, 4; by-drogen, 2, and the remainder small portions of Pittsburg gas the heat units are calculated at the other gases above mentioned. In 100 litres asks of comparison, in the same quantity of Sienesse, of comparison, in the same quantity of Sieness, of comparison, in the same quantity of Sieness, of comparison, and the same quantity of Sieness, of comparison, in the same quantity of Sieness, producer gas, at 113,000. In generating power to from 80 to 183 pounds of distensive policies and the same carbinates and coal equal in heating power to matural gas. The later explodes violently when mixed with 9 to 14 parts of str. When burned with pure oxygen, the fame temperature of the natural gas is estimated at 7100 degrees outliers. When the natural gas is estimated at 7100 degrees outliers are estimated at 2333 degrees centifyrade at the same temperature at the secure perfect onen burned with in the anough at the same centing at the same contraction and 1700 degrees centifyrade for matural gas, and 17000 degrees centifyrade for matural gas, and 17000 degrees centif

### ADOD MEALTH,

#### Contagion Carriers.

Files, Postage Stamps and Money Onveyors.

Ties, postage Stamps and Money Onveyors.

Ties, and the state of t

MEW TREATMENT FOR DIABETES,—The Paris correspondent of the London Loncet writes that, at a recent meeting of the Societe de Therepeutics, M. Martineau reported that he Therepeutics, M. Martineau reported that he had been treating cases of diabetes for the last 10 years, with almost invariable success, by a method he had borrowed from a practitioner to with or premature. The restingent is conclusions were not premature. The restingent is in the administration of a carbonite of lithia solution with arceniate of acadea, in acrated water, to the administration of a carbonite of lithia solution with his meals, the patient uses the sing this with his meals, the patient uses the sing this with his meals, the patient uses the sing this with his meals, the patient enes as a boverage when thirtes, begine as as a solution. NEW TREATMENT FOR DIABETES. - The Paris

carefully mix one dozen thoroughly beaten egge. Into this sift and mix a sufficient quantity of fine Graham flour, to reduce the same to a consistency which will admit of its being rolled out very thin; then out into a convenient size, and dry under a very low heat antil the moist auticient heat for drying. This preparation may be eaten dry, or it may be curmbed into a sufficient heat for drying. This preparation may be eaten dry, or it may be curmbed into a sufficient heat, when it makes a very palatable of hot water, when it makes a very palatable from weight than one preparation that way will probably furnish more nourish.

any other manner.

OLO PARILY IRON WORKS.—Among the mondatains and hills of Pennsylvania, out "iron State," the furnaces and works whose origin year in the long ago of America gather each year an added picturesquences from the fact plats they are being rapidly superseded by more modern establishments. Stock companies on modern establishments. Stock companies on modern establishments. Stock companies on properties which have been handed down from penses or the bear down from parties of the other parties of the farth and Hannes, with its outlous to trace up the call Hannes, and the other parties of the trace up perchance in has now almost died out the family name, but the works long since bore the family name, but the one or two maden ladies, of antiponer, "none possessory," but time has wrought the obsessory," but time has wrought obsessory, and one of aughters of the themselves or appears as a baptiemal prefix to the may be one or two maden ladies, to any possessory," one possessory," but time has wrought themselves or appears as a baptiemal prefix to a new preferers in the dear old Juric by the clam, and in a specific or one, which represents the search of the clam, and old a new of the clam, and old the time anamers and fancies give way to the modern time.

HARDEMING AND INCOMENTAL TEMPERING.—What is the theory of bardening liquors? To see the effect depend upon cooling shore, and the speed with which it is done? If that is the speed with which it is done? If that is the seed, with which it is done? If that is the case, there is the case, in the waster to make tempering seem there is a seed that is the contact with the long seem of the seem there will be in contact with the hot liquids. As the boiling point is relied the less steam there will be in contact with the hot liquids. As the boiling point is relied the less shout bardown will be in contact with the hot hardening when he was young, fells about bardown of the was just because the long seed a light seed in the following of himself when he was just because the long point it on top of the almost that the frough one end of the about the one of the sarvil was hot be put it on top of the large the case one of the sarvil. The stream had a two-foot head shove the bottom of the flume. Now he 'had above the bottom of the flume. Then he tried again, and when the sarvil was to see. Then he tried again, and when the sarvil was to see. Then he was just to see. Then he tried again, and when the sarvil was to seed only wish to see. Then he tried again, and when the sarvil was to the dumped it side down, point up wish to see. Then he sarvil the sarvil as hard as any that any one had some think the result! He was foolish each the dumped it side down, point up with the result? He was foolish enough to do with the result? He was some other cause at ference in the quantity of the waster have to do with the result? He was some other cause at the case of the was right.

THE CANDLE FLAME tends upward; its hot gases and the survounded heated air rising in a vertical atream which illustrates the universal bendency of warmed air. No matter bow it is and is pressed upward by that which aurrounds and is pressed upward by that which aurrounds draught: the temperature, length and size of the sir, column within the chimney. The various devices for warming are to be considered in a two-fold relation, as generating heat and affecting the breathing qualities of the air.

LOCOMOTIVE MANUFACTORIES.—There are 16 United manufactories of locomotives in the United States, axclusive of the shops owned by railroad companies. They employ about 14,000 mes and annually turn out about 2500 locomotives to be added to the number already in use. Without exception all these manufactories, at the present time, are overcrowded with orders. The business of the country in many places is fairly blocked, from the lack of ears and locomotives to move the freight which is presented.

A MOVEL MONUMENT FOR GEN. GRANT.—A grand monument for General Grant might be eread monument for General Grant might per detected from a grante shall feet long and 10 feet Vinal Haven. It is 115 feet long and to read on gquare at the base. Its plain abatt reared on the would better serve the purpose of indicating the site of the simple-hearted soldier's grave than of the prefentious and unartistic monumental designs as aubmitted to tardy contributions in New York.

LARGE BRIDGES.—One of the big bridges of the world will soon be ready for treffic. This is the iron railroad bridge across the Missouri, a few miles below Kanasa City. It is 7392 feet long, is 50 feet above high water, with towers reaching to a hight of 200 feet.

## USEFUL INFORMATION,

A FORTURE IN AN ACCIDENT.—A rather laughable story is that energy the origin of blue laughable story is that energy to control in the of paper, once so muod in voges of room manufacturer, named William Back, going into the factorial uses. The wife of an Faglish paper meruial uses. The wife of an Faglish paper manufacturer, named William Back, going into dentally let the back and its contents fall into a content later hand, scori-dent, and content is either to accident, and said nothing about it either to accident, and said nothing about it either to accident, and said nothing about it either the content in the part of some of the hands. He was the out, while the master was the content of the manufacturer of some of the hands. The interference of segarded as gross carelesences of paper was regarded as gross carelesences to of paper was regarded as gross carelesences to all the to one of paper was regarded as gross carelesences of paper was regarded as gross carelesences of paper was disponed on the paper was accepted as a protect with the unitody paper was accepted as a protect of the manufacture of the manufacture, and was for the manufacture, and was for the manufacture, and was for the manufacture of the manufacture, and was for years the manufacture.

Science.

A NOVEL ELEVATOR.—A our ious elevator has been proposed to race in the Eiff-st tower, which here proposed to race in the Eiff-st tower, which highton. The tower is to be 984 feet high and high said none of the ordinary forms of elevators could be used with a steely. The plan proposed is to conserved in the interior of a cylindrical tower a construct in the interior of a cylindrical tower a spiral railway track, on which shall run a truck of the whole interior space. This cir. Occupying the whole interior space. This cir. I straiged by the latter's revolution. Motion is railed by the latter's revolution, Motion is replication by the latter's revolution. Motion is replication to the truck carries a double-decked car which diviven by a stationary engine of the truck, and these caple friction pulleys, which communicate their motion to the trucks through a worm-gear and profed by the wheels of the truck, and these rapid profed by the wheels of the truck, and these are only to be revolved by the worm-gear and be the car would not descend, and these to the salong consequently, it anything should happen to the salong anotion on the gear and solid repair of the gear and would then descend as long as motion continued to be given to the car would not descend as long as long is run as a high speed, which the gear to be is run as a long speed, which the gear requires a motion at thus it is possible to use quite a small asble to give motion to a car containing the gear in the descend and the small asble to give motion to a car containing and longer and the given to the given to the gear results and the given to the gear containing and the supplies.

MORE TROUBLE FROM TIM CRAS.—It is reported that in a cargo of oil in tins which recently artived at Calcutta from Mow York
nearly all the tins were lesky on account of
some new soid used with the solder that atscore have and a soon as the time were litted the oil
the tin. As soon as the time were litted the oil
literally poured out, and the greatest difficulty
was encountered in getting men to land the
oil, as a kerosene shower-bath in the sun is
more than even Indian laborers will cadure
variently poured out, and the greatest be labels
oil, as a kerosene shower-bath in the sun is
more than even Indian laborers will cadure
to the considerable increase over the ordinary
wage. Why a solder which attacks the labels
frough the objectionable, it is difficult to guesa.
It is easy to understand that one which eate
should be objectionable, it is difficult to guesa
the cand then the inton pate might destroy
frough the tin to the inon galestop
the consumption of sanued goods. The lact,
there is little doubt that one sauged
by Corb thus conders object to tin, and Westfree laborers and on a nucle goods. The New
York butter venders object to tin, and Westen canners should be object as the cause,
of consumption of canned goods. The New
Tork butter venders object to tin, and Western canners should be any in mind that the salt
ern canners should be solder object to tin, in the tin
and generates a poisonous chloride of tin in the
course of a long voyage or being held long uncourse of a long voyage or being held long uncourse of a long voyage or being held long uncourse of a long voyage or being held long un-

What is the "Block System?"—The above question is answered by the Raikony Age as follows: "In the block system a rail.

Age as follows: "In the block system a rail.

way is divided into a certain number of telegraphic districts, the distance between which is decided by the amount of traffic. Each block station has signaling instruments by which the station has eigenling instruments by which the teled by the care a rail contains a signal in the case in the

Condensed Food for Campine Porpress.

Those who may have occasion to make a long and tedious mountain trip, on foot, where provisions must be earlied by hand, may make a most excellent and nourishing food, with little weight, in the following manner: Take say, six younds of the best beel, the same quantity of good mutton, and boil with the same quantity of the pest post of the pest provided in the constitution of the const

## ENGINEERING DOTES,

coolxeM al saois Past and Present Engineering Opera-

The following description which we clip from a cotemporary of the which have been accessed and the state of t

PROORESS IN MARRINE ENGINERRING.—Up to 18/81 the greatest power put into one ocean vessel was about 8000 indicated horse-power in the case of the Dandolo, Duilio, Infexible and Adcase of the Dandolo, Duilio, Infexible and Adcase of the Dandolo, Duilio, Infexible and Lear and Lear and Selectrocted, having each 18, 000 indicated horse-power, and now the Italian of which are being built by the Markonner and Sicilia, and lastly the Sardegna, the engines and Sicilia, and lastly the Sardegna, the engines of which are being built by the Hawthorn-Velop the anormone power of 22,800 indicated horse-power. There will be in this vessel four these anormone ache and the in this vessel four case, being the scale of corresponding and the seasof that the seasof the seasof the seasof four twinsces, being the collers, having each four furnaces, and the square presente minute. Реосвется и Млегие Еиспиетегие. - Up to

RAILROAD MILEAGE OF THE WORLD.—The es-timated mileage of all the railroads of the world, August, 1857, was as follows:

Oceania, including Dutch East Indies .... Africa, including Mauritius and Reunion 

sissippi.—More and more attention is being given to the project of connecting Lake Superior with the Missisappi river. The increasing commerce of that region will soon make such a work a matter of great necessity.

warded to the officials of the company in San Franwere and an answer is expected by the end of the
were by the officials of the company in San Franwere Drytown and Plymouth, continues to give encouraging evidences of turning out a paying propety. The present owners are explicitlers of Massaschalled, who are operating the claim in a workchalled, who are operating the claim in a workatumel has been tun into the side-bill, connecting
with this shaft at a distance of 195 feet, A large
atumel has been tun into the side-bill, connecting
with this shaft at a distance of 195 feet, A large
three gold to the maked eye.

MISCELLANEOUS.—The Cleveland mine, above
the gold to the naked eye.

MISCELLANEOUS.—The Cleveland mine, above
the gold to the naked eye.

Big Bat Bridge, has been bonded to Mr. Taylor for
property, and has purchased a five-stamp mill in
property, and has purchased a five-stamp mill in
the with the constitution of the scattlers of the
clevelopt the
the Wildman of the scattler of considerable ore on the
the Wildman of the scattly of waster.

Dec. 17: There is a general complaint in this secclaisverse county, which will be moved at one on to
property, and hey don't look for any increase until we
the Wildman mill. The mill was clarked the mountains,
the Wildman mill. The mill was started and run
but it requires and warmer weather. There is
for a few hours, when it was brought to a standerintorush it to make room for waste.

Frow has good deal of rook on the dump, which
to rorush it to make room for med it. The stamps of
the Wildman mill. The mill was streated and run
but it requires and warmer were the clockwork.

Frow as good deal of rook on the dump, which
the captorly of water as getting ready in the paint with the other
rapidly. The elast is clearance in the mine is processary
to crush it to make room for waste.

The order at the south shaft is cleared as
and the sills of the gallows-frame are in their paine git
the sagridy of water were laid of Ragin peterdady.

The crush to wark is the

distion.

AMADOR QUEEN,—The affairs of this company are still in an unsettled condition. Judge Lindley returned from Ban Francisco Sunday night, without tion is now made to give the judgment reducers a first mortgage on the mine and mill for one year as first mortgage on the mines and mill for one year as first mortgage on the mines, Judge Lindley returned to report the proposition to his clients, who seems in months. It is probable that the matter will be temporarily fixed up on some basis of this kind. A porarily fixed up on some basis of this kind. A porarily fixed up on some basis of this kind. A meeting of the creditors was teled Tuesday, when it meeting of the ordinities was decided to submit two propositions were for wateded to the officials of the company in Ban Francisco, and an answer is expected by the end of the cisco, and an answer is expected by the end of the Chamber of the company in Ban Francisco, and an answer is expected by the end of the Chamber of the company of the company of the contraction.

KENNEDY.—Amador. Ledger, Dec, 17; The new hoisting works over the main shaft are tunning smoothly. A peculistity about the machinery is smoothly. A peculistity shout the machinery is the north safe Versaged, which it is elaimed greatly increased their strength and durability. At the north safe they are engaged in enlatging the upper portion, so as to conform with the size of the partment in its entire depth, 600 feet, At this deept by the was connected with the main shaft several upper geo, which has materially improved the vental failing.

#### CALIFORNIA.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

MINING BUMMARY.

mining properties in the State. This is no idle boast. The mines now show for themselves.

PHUMBUG CANYON QUARTZ.—Foothill Tidings.)
Placers Co. Humbug Canyon is a tributary of the which we speak and which are on the line of the cannon with the state of the mines of which of Danascus, a well which we speak and which are on the line of the cannon with of Shady Run, a station are about five miles north of Danascus, a well whole we speak and which of Shady Run, a station of the cannot see a small mining canny. Well was been recently sold to on the Central Pacific Asilvoad.

One of the mines of Humbug Canyon is a station of the Central Pacific Asilvoad.

Old Ploneer, and that mine has been recently sold to on the Central Pacific Asilvoad.

Old Ploneer, and that mine has been recently sold to on the Central Pacific mine. Heavy meaning to the old Ploneer and distance of Humbug Canyon, to state the owner of the old Ploneer and the state of the cannon per ween Emigrant Cap, the new road was not a factor of the cannot be the cannot be sufficiently as a state of the cannot be sufficiently of the old Ploneer and a state of the cannot be sufficed by to sufficiently as a suid the Central Pacific mine. Heavy meaning to an achineery is aid the Central Pacific mine, the was on to add gives the connection between Emigrant Cap, made was a said the Central Pacific mine. Heavy meaning and miling on the suffice and McEasan, who weing taken to the suit of the old Ploneer and a said the Central Pacific mine. Heavy meaning and miling a mill and are making other peng prospecting mill at work on the conscisor, are building a mill and are making other peng prospecting mill at work on the conference and the perfore the conners of the suffice of gravel on the face for the conners of the duffice the connection between the conference and with hour feet of gravel on the face connection the duffice to gravel and a sill going down. The nowly enger gravel and still going down. The nowly controle sold with down with done set in the duffice to gra

Plumes.

Spanish Ranch—Cor. Greenville Bullstin, Dec. 14: The large haven—Cor. Greenville Bullstin, Dec. 14: The large haven—Cor. Greenville Bullstin, Dec. 15: The large hydraulic mines are not calculating as all this coming season; hence they are not making at all this coming season; hence they are not making any purpose of mall mines are preceding the large of the property of the Hallsted bros. Of the Perry on mit, which depends largely upon the amount of soron we have. The Hallsted bros. Of the Perry on the Hallsted bros. Of the Perry on quartz-mill when the water supply is too short to quartz-mill when the water supply is too short to quartz-mill when the water supply is too short to quartz-mill when the water wheel, and the property of the same to the species of the property of the same to the same than the harding the same same short of the same to 
Monterey.

Los Burros Muns.—Monterey Argus, Dec. 17:
Messrs. J. J. Connet, Charley Hudson and Wm.
Mars came in from Los Burros mines last Monday,
and were interviewed with the following result: The
Cruisshank mill started up last week, and runs like
Cruisshank mill started up last week, and runs like
Gruisshank mill started up last week, and runs like
stamps weighing 750 pounds each. The engine (8
horres power) and boiler were manufactured by
horres power) and boiler were manufactured by
horres power and boiler were manufactured by
having just returned from putting it up. All the mahaving just returned from putting it up. All the mahaving just returned from putting it up. All the mapainer, was packed in on mules. Harry Hudson is
running the mill. The ore is very rich. At the end
of a 48-hour run, there was 9 pounds of gold-amstrunning the mill. The ore is very rich. At the end
of a 48-hour run, there was 9 pounds of gold-amstrunning the mill. The ore is very rich. At the end
of a 48-hour run, there was 9 pounds of gold-amstrunning the mill. The ore is very rich. At the end
of a 48-hour run, there was 9 pounds of gold-amstrunning the mill. The ore is very rich. At the end
wide, and speckled with gold at a depth of 20 feet.

Wide, and speckled with gold at a depth of 20 feet.

#### Monterey.

will yet be discovered a large substratum of coal. Borings in several places on that property have

TRINITY CENTER,—Our correspondent sends the following: Mr. W. Wheeler left this morning for Trench Gulch; he is going to run a tunnel on his quartz ledge at that place; it is an extension of Frank Wheeler's ledge and is supposed to be good property.

tions as usual on the Happy Camp claim will continue operations as usual on the School-house flat.

Trinity Journal, Dec.
Trinity Journal, Dec.
Trinity Journal, Dec.
Try: Charley Glizean, Oli Deadwood, presented us with a week glizean, Oli Deadwood, presented us with a week discase. They considerable work on the mine and are now running tender, by Barrows & Glizean. They have done considerable work on the mine and are now running included in the vein which wastes from 4 to 13 per considerable work on the mine and are now running included in well begin crushing. They have about as tons of ore on the dump and will copin crushing in Glibson's cannon-bail mill. They are working the dump and will copin will begin crushing in Glibson's cannon-bail mill. They are working in Glibson's cannon-bail mill. They are working the west end of the same mine; he as about 40 tons on the wind well well of the with a serious of included to a solice has about 40 tons on the wind has a feet under the wind has a seal John Wallace and O. R. Smith own the Hard.

The 'HARDSCRABBIE.''—Mr. W. R. Bigelow, of the will beging the will beging the to 10 include in winding and carbolle mine which they will work this winet; they are sinking an inclined shaft and are and John Wallace and O. R. Smith own the Hard.

The 'Hard are well defined which and carbolle mine which they will work this winet; they are sinking an inclined shaft and and on the state free gold and galena sulphurers; the will be ledge has been traced on the surface for 300 broperty ing ledges are being worked. Include to 10 in the beard on which server a good upon the state and the harding might way fam.

Several good-paying ledges are being worked. Include to 10 in the will work was fam.

Jet yeld of gold in early days and on which several good-paying ledges are being worked. Include solone and we wish the owners are very favorable for the development of a geode of the development of the development of the care of the surface of the server favorable for the development of the dis

Albakiyou, Dec. 15; Mr. Bradley, the expert who recommended Ball & Co. to purchase, the expert who recommended Ball & Co. to purchase the Mountain Laurel mine in Salmon district for Mountain Laurel mine in Salmon district for the Mountain Laurel mine be seen to be toloking well, and the mili ene terports to be toloking well, and the mili be set of the seen of the more water can be obtained. There are you tons of trich ore in the dump, Ball & Droperty, Jimmy Keane, who sold the Mountain property, Jimmy Keane, who sold the Mountain property, Jimmy Keane, who sold the Mountain property, Jimmy Keane, who sold the Mountain HAPPY CAMP.—The mines here are, with the exception of the kitchardson claim, being fitted up for the mining season. The Richardson mine has still fine mining season. The Richardson mine has still will continue the present dition to Geo. Wood's a limited supply, and piping is carried on. They will continue the present dition to Geo. Wood's will be mined in the carried on the Mountain the mined in the seast the transh white will proposably be mined in the near turner, which will probably be mined in the near turner, and will continue operations at usual on the School-house flat.

The Happy Camp claim will continue operations as usual on the School-house flat.

Thirty, The Happy Camp claim will continue operations as usual on the School-house flat.

#### SISKI LOT.

Shaeta, Squaw Creek—Shasta Democrat, Dec. 14:
Squaw Creek mines are improving as development work progresses. Creesus is showing up a need work progresses. Creesus is said of the new and rich body of ore. The same is said of the new and rich body of ore. The same is said of the new and rich body of ore.

BULLION.—Have commenced sinking the shaft seper. It will be sent down from the 300 to the

low-grade quartz through it, The 500 level southwest drift has been cleaned out and repaired a total distance of 453 feet.

BELCHER,—The 400 level, south drift, is now in too feet south of the north line. The face is in porphyry and showing streaks of clay and quartz. The 500 level raise is ago feet, from which point they have drifted at Souto tunnel drift is out 1035 feet.

SEGREGATED BELCHER,—The 1300 level raise is ago feet, from which point they have drifted at one, and there is no change in the face is in good ore, and there is no change in the character of the ore in the fact raise.

The reads to the considered that is not considered that the consid

UTAH.—On the 47s level the north drift from the west end of west crossout 'do. 6 has been extended goffeet; total length, soo feet. The formation in the face is porphyry, clay and quartz showing some value.

CHOLLARE,—The see Jevel west drift was connected

ALPHA.—Are still sinking the shaft. It is now down ag5 feet. Sinking will be continued until an outlet to the Sutro tunnel is made for the water. The sinking is done in a filled part of the shaft, and it is not known how deep they will have to go until an outlet is reached.

\$95,000.

OCCIDENTAL.—From the 48 level have been extracted 49 tons of good quality over. The ove chute treated 49 tons of good quality over. The ove completed with the exception of side chutes. Are stoping with the exception of side chutes. Are stoping one on the roo level, but none has been removed too tons to the McCone mill.

BEST AND BELCHER.—On the rajoo level, the east of not so the McCone mill, have been extended 59 feet; total length, soo feet. The face is in hard porphyry. The east drift from the bottom of the porphyry. The east drift from the connected with the west drift from the Con. Cal. & Va., 1500 level sould drift.

tracting the ore.

GOULD AND CURRY.—On the 455 [evel the upraire string of the ore.

GOULD AND CURRY.—On the 455 [evel the upraired up 35 [eet, has been further extended \$5 e

Washoe District.

Andres.—Vivginia Enterprise, Dec. 17: Are now in the 3-pole District.

Andres.—Vivginia Enterprise, Dec. 17: Are now on the 3-polevel was advanced 8 feet. The west diffit on on the 3-polevel was advanced 8 feet. The west diffit on on the 3-polevel was advanced 10 feet.

HALE AND WORCROSS.—Above the 7-polevel, the stope is now 14 sets of timbers long, 5 sets wide, and stope is now 14 sets of timbers long, 5 sets wide, and 10 feet south of the find, there are two sets of timpers and 10 feet south of the find, there are two sets of timpers and 10 feet south of the find, Are now purfore tabore, the south in the find set in the order shower the sell floor of the drift. Are now purfore shower the south, have encountered the downing it of leet further south, have encountered the downing to leet unther south, have encountered the downing to leet unther south, have encountered the downing to leet unther south, have encountered above, and have commenced putting in square sets and extracting the ore.

GOULD AND CURRY.—On the 45S fevel the uppersent and sets may a set and set and sets of the ore of the downing the ore.

#### NEANDY.

mitter conce entring.

ORE.—S. H. Teeters brought some pieces of ore to this office Monday, taken from a vein on his place, he says an extension of the Mt. Vernon baloc, he essilved &568.55, other tests returned he which he realisted &56.55, other tests returned he tween \$40 and \$50 per ton. The wein is narrow, hardly four inches thick, at a depth of so feet. The ore in which gold is visible is a mixture of granite and quartz apparently deconded and broken up.

thoroughly tight and perfectly available for said purpose. The working shaft is large, roomy and splendid, imbared; being a nowel of mining engineering. The gentleman intends sinking to a great depth, and determining for a certainty the falsity or accuracy of that theory denying the finding of large amounts of gold at great depths. He is now 80 feet below present grading, and intends sinking as of letter before drifting.

THE ALMY COAL MINGS.—Salt Lake Tythune, Dec. 16: The Central Pacific coal mines at Almy. Wyoming, are sending out an average of 45 cars of Wyoming, are sending out an average of 45 cars of company, are sending to me mine, No. 6, and will company is opening a new mine, No. 6, and will coal per day, all of which goes west of Ogen. The coal per day, all of which grow the best of the mines at helm on Peatic with a factor of the Union Peatic with the Coal Business.—It has been mars intending the placing of their coal interest in the faands of a syndicule to operate, thus taking the coal business syndicule to operate, thus taking the coal business entitlety out of the interest of the coal peat of the faands of the company. The fact that A. C. Beckwith, senior partner of the firm of the ladded to be company. The fact that A. C. Beckwith, senior partner of the firm of the mars of the company. The fact that A. C. Beckwith, Senior partner of the firm of the mars of the company. The fact that a senior partner of the company of the firm of the partner of the firm of the firm of the partner of the firm of the fi WYOMING.

REXIEW.—Still Linke Without, Dec, 16: The receipts of health of the week with a special and the week with the health of the with the bounding of the week with the working of the with the working and the week with the work of the work of the week with 
Sering a vein of four feet of solid ote, which is shall be such as a fact into a solid ote, which is sparker all the time one of first and second-class shall chouse about go tons of first and second-class shall chouse about go tons of first and second-class and are taking more our every day. The Car. Beather more our every day, is now leased by Mershall beather this season, which prospects extremely well beather in width. The Bullion plans the Chiff, and have been controlled by Mershall beather the season, which prospects extremely well bases ledge of surformer of the facts. Jensen and Alckay, is now leased by Mershall beather this season, which prospects extremely well bases ledge of surformer of the facts. Jensen and Alckay, is now leased by Mershall beather the season, which some the beather the main the surformer of the facts. Jensen and Alckay, see the control of the ledge has not been proved to be seed of the surformer of the season and the ledge. The Charles beather of the season was a thinger. The Charles beather one of the season and the ledge. The charles beather the main fedge. The surformer of the season was a thinger. The class been arken our and shipped. Great beather one of the season and the ledge. The charles are surformed to the season and the ledge. The charles are surformed to the season and the ledge. The charles are surformed to the season and the ledge. The charles are surformed to the season and the ledge was a struck as a struck as a struck as the season and the ledge. The charles are surformed to some the surface and the ledge. The charles are struck the same struck as a struck as a struck as the season and the ledge. The charles are struck as a struck as a struck as the season and the surface and the ledge was a struck as a struck are specied to the surface and the ledge was a struck as a struck

Mill.—Jacksonville Times, Dec, 15; The quartz-mill near Gold Hill is running day and night, and crushing a large amount of good quartz, John Miller, who owns a large and first-class placer mine on

property.

MEW MINING DISTRICT, Butte,—Mark-Mounmonning from Amontany of the cancer of the term of the caused on much salk in mining caused so much salk in mining caides, which has salf showed the voin to be badly twisted and broken, by Meszre, Jülis Bros, and Dekay, and the discovery salk from was located in September last showed the voin to be badly twisted and broken, by Meszre, Jülis Bros, and Dekay, and the discovery salk from was located on a sale from the control of sold of the control of sold 
JEANUETTE.—Robt. Deardon is down from the learnest emine, where is looking well, Meesrer. Deardon & Cooksate doing considerable work on Disardon & Cooksate doing considerable work on Disardon and are hopeful that they have a good property.

the Dest ones, studeng not me 756-1001 [svet], and it for the rest ore ever found in the mine.

A STRIKE IN THE CAMAS FRACTION.—]ack Measures, who came in roday from the Gold Belt, states that yearerday, while doing the annual holding backer and the clamas fraction, adjuning the Camas Work on the Camas fraction, adjuning the Camas Work on the Camas fraction, adjuning the Camas Work on the Camas Most of the Camas of the Most of the Mos

JUBILANT OVER THE STRIKE.—General Roberta, who wished Electory to proceed to the cook of the Gate Chiy and Broaddroid deal very jubilant over the feet of high-grade or in the Gues of the Hills. It was made as a very strong depility of only 350 feet, although on the Thills. It was made as a very local condition of the Fills. It was made as a very a deal of only 350 feet, although on the Stochook of the man of the Manual China of the Manual Chi

THE LEAD BELT.—Inter-Idaho, Dec. 10: Mr. Mesgot of Era, from the Carbonate group on the bead of Antelope creek, gives us the following repeated to the short of some of the mines there. When we remember the some of the mines there. When we remember the short time that has elapsed since this lead bett was discovered, we shall see that the developments are very flattering and give fair promise of making this, as many old prospectors claim it will be, the liveliest camp in Idaho next year. There is the liveliest camp in Idaho next year, There is plenty of wood and water. The Cliff No. 1, Mesers.

#### IDAHO.

DAKOTA.

BALD MOUNTAIN ORSE,—Black Hills Pionest, difficulties aurounding the accessal tradement of difficulties aurounding the successul treatment of difficulties aurounding the leaching experiments of difficulties aurounding the leaching experiments of Mr. R. D. Clark were made, has given rise to man and through which the leaching experiments of Mr. R. D. Clark were made, has given rise to limite of the Black Hills. Among those who have given considerable attention to the matter, and who care of the latter should prove a successe, if the sate of the confidence they propose caracting the provention of the successes in the sate of the successes, and in the plant, it is claimed, at Carlor which is to be in operation by it is confidence they have in the made.

That the confidence they have in the method is to confidence they have in the success. If the state is cost not expected in the tork will be they also be in operation by the first of March, which is to be in operation by the first of March, and the success in the success in the successed in the successed in the tork will be and silver proved in its cos

#### DAKOTA.

DEADYLLE MINES.—Herald-Demoral, Dec. 14; Prospects continue to improve at the Continental Chief. The workings of the Officer shall of the Showings are not showing as much ore as they were at the Continuental List, however, of very low grafe. The weekers ago, working as a much ore as they were a few weekers ago, about the shall be been as a few that it is, however, of very low grafe. The Vir. We had a highly considerable one, and shipping considerable one and shipping considerable one and shipping considerable one water size from the diven further and sonther tasks made. The Rose and a shipping to the states from the diven further and sonther tasks made. The Rose address and the states from the assistant of the shall probably be diven further and sonther tasks made. The Rose as the north shall of the Allegany continues to make more water, and it will probably be strucked to make more water, and it will probably be strucked to make more water, and it will probably be struck to considerable more water, and it will probably be struck to proper a struck of the considerable more water, and it will probably be struck to place a pump in it before long. This first is nearly as deep as that of the Allegany contribute to make more water, and it will probably be should to the control of the shallegan which is concerniated asserved wange to the shalled body of ton its more than 90 cets think. Much the count for the more forms to the shalled body of ton is more than 90 cets think. Much of the into its more than 90 cets think. Much of the into its more than 90 cets think. Much of the into its more than 90 cets think. Much of the into its more than 90 cets think. Much of the into its more than 90 cets think. Much of the into its more than 90 cets think. Much of the into its more than 90 cets the shall be suited by the mine in a manner of iron its in the long that were the sampling worked the Mathews of the more than 10 cets for the mental of the Mathews and made to made that made to made to made to the suite in the More that t

MOTES.—Prescott Courter, Dec. 14: Saturday last while conversing with visiting miners, we secured facts from which we write the following encouraging news: M. Ellis paid teamsters two cents as pound in order to get the last of bis machinery to his mill be to great the last of bis machinery to his mill be to secure teams to bring his open defended to the Clatence-Ruby of the clatence it. He is manager of the Clatence-Ruby of the machiners it. He is manager of the Clatence-Ruby of the machiners it. He is manager of the Clatence-Ruby of the machiners it. He is manager of the Clatence-Ruby of the machiners it. He is manager of the Clatence-Ruby of the Clatence of the Clatence-Ruby of the Clatence of the Cl

#### ARIZONA.

Mountain King, Mgg Cold Bat, Green Bate, Hall Mountain King, Mgg Cold Bat, Green Bate, Hall Mountain King, Mgg Cold Bat, Green Bate, Hall Jon of capitalists from all over the country. Beat the attention of capitalists from all over the country. Beat of perceip, based upon the most careful and elaborate tests of the property is situated in White Pine Central Railway. The projected railway they country, Eastern Employers, W. Maynard shows that the property is situated in White Pine Western terminate of the property is situated in White Pine Western terminate of the property white consists of yra acres of perceip and they capital they white he water of said streams; 68 acres of gold-bearing gravel at most of the gravel in one body, beld by indisputable in the capital streams; 68 acres of gold-bearing gravel at the first streams favorably in the water of said streams; 68 acres of placer in the capital streams; 68 acres of placer in the capital stream; 68 acres of blacer in the capital stream; 68 acres of placer in the upper part of the gravel to range from the gravel to range from the gravel to the capital stream; 68 acres of capital streams; 68 acres of capital streams; 68 acres of capital streams; 68 acres of ore the stream; 68 acre

## F. A. HUNTINGTON,

CONCENTRATORS AND ORE CRUSHERS. Centrifugal **SIIIM** ZLIENT

Mining Machinery of Every Description,

steam Engines and Shingle Machines.

SAN FRANCISCO, CAL. SEND FOR CIRCULAR.

No. 45 FREMONT STREET,

Centrifugal Roller Quartz Mill.



окк скознек

43 DEL ST., NEW YORK

# PULVERIZER

Of dry amper-heated steam, so arranged that they continuously obarge themselves with crushed or granulated material, and by the great force and velocity of the steam of reaches the materials are considered against the contract of the input of the steam currents employed, through which every minute particle of ore mute particles from to be pulverized to any degree of snearches desired. The high temperature of the supper-host and dry, which produces a beneficial effect upon Sulphurets and ores containing rustry Gold. The light weight and simplicity of construction of the Fulveries, it is extremely small and inexpensive wearing parts, are the WONDER and SURFRISE of all who witness its operation. The Company is prepared to furnish complete plants for pulverising POWERFUL OPPOSING CURRENTS

10 TO SOO TONS PER DAY,

#### PNEUMATIC PULVERIZER COMPANY Including a Sectional Steam Boiler supplying all the power required.

Write for Particulars. 2 and 4 Stone Street, NEW YORK,

# and Salivation. Entirely Prevents Lead Poisoning LIFE-SAVING RESPIRATOR

The most periest appliance for people engaged if Smelting, Dry Crushing, Guano Works Quickelliver Mines, Lead Oort odding, Threshing, and all other computations and all other computations of the feet of the description of the feet in distribution on the indicate of the feet of the

Send for Descriptive Circulars containing Testi-onials of well-known parties who are at present using JOHN TAYLOR & CO., Sole Agents, 114 to 118 Fine St., San Francisco.

osfor, Office of the Mivino, 1900 for free circulars of the Correct Office, by Mivino and Osfor, Ben Free Sel, Hospital Pen Free Sel, Ben Free

California Inventors Dewe 60.

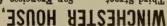
FULDA BROS., Proprietors,

CALIFORNIA WINE COOPERAGE CO.

San Francisco

SO to 40 Speat St., San Fran all kinds of casks, tanks, etc.





44 Third Street, San Francisco, Cal.

Laundry Free for the use of Families.
HERE AND COLD BATHS TOH This Fire-proof Brick Building is centrally located, in the healthiest part of the city, only a half block from the Grand and Palace Hotels, and close to all Steamboat and Railroad Offices.

Terms, Board and Room, \$1.00 per Day

ROOMS WITH OR WITHOUT BOARD.

FREE COACH TO THE HOUSE

Practical Treatise on Hydraulic Mining. T SOOFEX.

This new and important book is on the use and of the use and or rivelon of Ditches, Flumes, Dams, Pipes, Flow of Warn of Heavy Grades, and feevel open and intelligent of mines, recorded to weaking, motherist of mines, recorded the weaking, motherist of mines, recorded the most set of descriptions and elevations, etc. A very practical wire gold miners and univers, railings in gold imports and users of water. Price, \$5, post-parcical work of the miners of water. Price, \$5, post-parcical wire and uners and unears of water. Bride, \$5, post-parcical.

THE RUSSELL PROCESS COMP'Y.

THE RUSSELL PROCESS COMPY.

This paper is printed with ink Manufactor, 500, 500

C. A. STETEFELDT, President,

C. A. STETEFELDT,

C. A. STETEF



We have here the Scamp Mail in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the rapidity (300 strokes each per minute) which they true. There are 4 shoes in each stamp, so plats there are 4500 strokes of the shoes on the dies per minute. Less power is required than in any other mill to do the same amount of work.

The Mortar has screene at both ends, giving ample discharge. There are no cams or tappped to wear or he adjusted. The stamps adjust themselves as the shoes wear.

AN AUTOMATIC ORE FEEDER

Goes with each Mill. We also have a suitable

Rock Breaker.

Several Mills are now in the mines doing excellent work. The "Economia" is not only a mill for small mines, but we believe it is destined to superseder the old stamp in mills or the Lagorat Oardonard.

SAN FRANCISCO, CAL. 34 and 36 FREMONT STREET, TATUM & BOWEN,

Manufacturers of Mining and Sawmill Machinery, Engines, Boilers, Etc.

THE GIANT POWDER COMPANY

The Satest and Strongest High Explosives in the Market.

Of Different Strengths as Required. CIVAL BOMDEH OF DYNAMITE,

GETYLINE-DEAWWILE, Stronger than Dynamite and even Safer in Handling.

WOREL'S EXPLOSIVE GELATINE," which contains: 94 per cent of Mitto-Glycerine,

10DSON POWDER IMPROVED.

FOR KAILROADS AND LAND OLLARING. 1s from three to four times estronger than crimery Blask-naye brower, and is used by all the Realroads and drawed Cainals, as it breaks more ground, pulverizes better and saves time and money. It is as dry as the ordinary Blasting Powder and runs as freely.

BANDMANN, NIELSEN & CO.,

GENERAL AGENTS, SAN FRANCISCO CAL.

## Metallurgy and Ores.

## SMELTING and LEAD CO. SETBA

416 Montgomery St., San Francisco.

And Assay Office, COLD AND SILVER REFINERY

Highest Prices Paid for Gold, Silver and Lead Ores and Sulphurets.

BLUESTONE, .... MANUPADTURNES OF....

SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

## OHN TAYLOR & CO.,

ASSAYERS' MATERIALS, MINE

GISLS, GEVSSMYRE VAD SANDRIES' EL CHENIOVE VABVIVALOS VAD CHENICVES' AND MILL SUPPLIES,

A to notanette street, - A to notanette attention of

pphraction.

Ag'Out Gold and Silver Tables, showing the value per muce Troy at different degrees of fluoness, and valuable ables for computation of assays for great degrees of fluoness, and valuable should be sent free upon application. Agents for the factor of this well-known natural factor of this well-known natural factor. The reliable, and this well-known natural factor of the reliable, and this well-known natural factor. The reliable, and this well-known natural factor are thoroughly are the reliable, and this well-known natural factor. The reliable is the reliable of the reliable in the reliable of the reliable in the reliab

## Nevaua Metailurgical Works.

NO. 23 STEVENSON STREET, Near First and Market Streets, S. F.

Отев worked by any Process.

Orea Sampled,

Assaying in all its Branches, Assaying in all its Branches, Analyses of Ores, Minerals, Waters, etc.
Working Tests (practical) Made.
Plans and Specifications utraished for the

Mines: Plans and Reports furnished Special attention paid to Examinations nost suitable Process for Working Ores

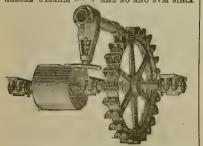
O. A. LUCKHARDT & CO., (Formerly Huhn & Luckhardt, ) Mining Engineers and Metallurgists.

METALLURGICAL WORKS.

218 Pine St. (Basement,)

Mining Engineers and Motellurgists.

PELTON'S WATER WHEEL.



HIS WAS OUR OF THE FOUR WHEELS TESTED

A by fol oldhot Company & Chess Walley, Cal., and
fivel 90 2 per cent., distancing all competitives. Send for
fivellars and guaranticed settlimatics.

AGENTS—PARKE & LACY, SI and 25 Fremont Street
San Francisco, Cal.

L. PETERSON, MODEL MAKER, INVENTORS, TAKE NOTICE!

258 Market M. M. E. cor. Front (up stairs), San Francisco Experimental machinery and all kinds of metal, the, copper and brass.

QUARTZ MILL, Hantington Centrifugal

A SEND FOR CATALOGUE TO

IIGS and TROMMELS

CORNISH ROLLS, FRASER & CHALMERS,

**ENCINES AND BOIFEBS**'

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES.

HALLIDIE'S ENCINEZ'

HOISTING

AIKE KOBE

TRAMWAYS,

No. 248 Elghteenth Street, Denver, Colorado. DRIVER OFFICE:

JAMES LEFFEL'S

PARKE & LACY, General Agents, San Francisco, Cal. FRASER & CHALMERS, General Agents, Chicago, III., and Denver, Col.

1AMES LEFFEL & CO.,

or 110 Liberty St., Mew York

MEXICO OFFICE: No. 11 Oalle de Juarez, Chihushus, Mexico.

NEW YORK OFFICE:

ROOM 48, No. 3 Well Street. GENERAL OFFICE AND WORKS: Fulton and Union Streets, Ohicago, III.

'Sawna

MACHINERY,

-bael ni noitaveqo ni al

This Mill as a Crusher and Pul-verizer is without rival.

STURTEVANT MILL.

CORNIZH

**ENCINE2** 

PUMPING

UTAH OFFICE-SALT LAKE OITY, UTAH.



# COLD MINERS

Quartz, Gravel and Placer Mines!

Silver-Plated AMALGAMATING

HYAE BEOAED THE MOST ECONOMICAL AND SUCCESSFUL

Fifteen Medals Awarded

Old Mining Plates Bought, Replated, or Gold Separated. Over 3000 Orders Filled.

Assayers' and Mining Material, 112 to 118 Pine Street. These Plates can also be purchased of JOHN TAYLOR & CO., Dealers in

San Francisco Gold, Silver & Nickel Plating Works,

653 and 655 MISSION ST., SAN FRANCISCO, CAL. E. G. DENNISTON, Proprietor.

SEND FOR CIRCULAR.

# THOMAS PRICE'S ASSAY OFFICE,

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder, Ores Received on Consignment, Sampled, Assayed, and Disposed

> & \$1.t 1 25 (Free American Exchange Hotel, NOTICE.-My Silver-Plated Plat





OHAS. & WM. MONTGOMERY, Prop'rs.

#### MINING SHAREHOLDERS' DIRECTORY,

COMPILED BY REAL THEREOF PROM A DESTREMENT IN MINING RED SCHEILET TREVE CENTER OF THE STATE OF T

St des	328 Montgomery St	dasM L., sgoxinA	Silver King M Co.
SI 1498		Nevada., W. Letta Oliver.	Paradise Valley M Co
Dec 5	306 Pine St	Merada . E H Willson	Eureke Con M Co
91 YSM01	52 Montgomery St	Oalifornia. T. Wetzel	Derbee Blue Gravel M Co.
01 o9G	38 VrsmogtnoM 908		Con California & Va M Co
AMOUNT, PAYABLE	OFFICE IN S. F.	LOCATION, SECRETARY,	MAME OF COMPANY.
THS.	VITHIN THREE MON	YLEST DIVIDENDS-V	I
62 ээО Пепина	38 TramoganoM 606	msmrstaW A	Weldon M Co
eg ood fanaaA	32 viemoganola eog	Arizona. A Waterman	Peer M Co
g natlaunna	309 Montgomery St		Mountain M Co Peerless M Co
Of ast	33 Wearny St	guerrangh O	Genersee M Go
62 09G lauanA	369 Montgomery St	namiestaw A	Combination M Co
MEETING DATF.	OFFICE IN S. F.	LOCATION, SECRETARY.	NAME OF COMPANY.
	TO BE HELD,	SONTAGEM	
32 Vientegoniery 25		Nevada., 3., 25Dec 13	ОО М поО дел О
		.01 vol0335sbavel	Union Con M Co
er 309 Montgomery St.	Jan 11 Jag 30 E L Park	Nevada9025. Dec 7	Sierra Mevada M Co
48 vismostnoff 808		08 vo M03 92 65 8vo M	Potosi M Co
42 vienoganoM edeword	Jan 16Feb 8A K Duri	Nevada 1. 25Dec 18 California6 001Nov 2	Pennsylvania Con M Co
		Nevada 3. 50. Dec 16	Meyada Queen M Co
38 gramoganold 808		California. 21 10 Oct 19	Mew Coso M Co
hellGrass Valley	Dec 20Jan 7T J Mitc	".California 20, 01 Nov 18.	North Banner Con M Co.,
		"Oslifornia, 12., 15 Nov 26.	Morgan M Co.
		California, 26, 10, Nov 14,	Mayflower M Co
		Mevada 7. 1.00. Dec 9	MayandayaM Co M. TayandayaM
ts viewoginoid 223 525		California., 7 05 Dec 12	LIVE ORK Drift M Co
tevant, 309 Montgomery St	Jan 5 Eeb 6 C K Stur	Mevada., 9., 10, Mov 25.,	Kossuth M Co
de viouspanoly SZS		. Yo.M G	Heath M Co
	. Dec 22Jan 12, T Wetzel	.California., 4. 01Nov I7.	Gray Eagle M Co
		California. II Dec 15	Golden Fleece M Co
ing 224 Montgomery St.		.II VOVOSI BGOSFIA	Figher M Co
	Dec 17 Jan 9., TE Hoth	Il vovi02 anosirA	Felice M Co
	. Dec 10 Dec 30 J Stadfel	d vow 30 I absve M	Tound Treasure M Co
		. California. 6. 1.(0, 100 IV. 3. 6. 1.(0, 100 IV. 3. 6. 1.0)	Chollar M Co.
		.e voli01sinroliteD	Chicago M & M Co.
		.95 vol0536 Bbsvall	Alta S M Co.
SETARY. PLACE OF BUSINES.	DEFINGIAL SALE, SECH	LOCATION, NO. AM'T, LEVIEL	COMPANY.
	'C.T.NTOTHIC		

## Table of Lowest and Highest Sales in

8 Ţ 0 8					rpje of Low	San Francisco Metal Market.	
	.6%	uBU	XI	Stock	'J' 'S	WHOLESALE,	
W	WEEK		ME	WERE	MAME OF	THURSDAY, Dec. 22, 1887. — \$\int \text{9}  \text{\$\pi_{\text{MONY}}\$.}	. di
Dec En	NDING Jet. 15.	H DN	ENDI	Dec. I.	COMPANY.	X—San Bernardino63@ 7	7H
						. —на	ad
99 1		2.10 2.				Athing 26 26 A	eq:
35. I	92'T 09	.1 87.£	09°T	07.1 0d.	des	A 35 0 25	ուլ Ձա
00.7	42 L 37	.6 gar		82t 46	Кепсв	LA   00 08.50 —	NC
01.7		.8 87.8		08.6 08.		erican Soft, No, I, ton.	ш
27.1	06.2 82	2,40 2,	27.25	07.2 81,	uoill	Table White - 50 02 52	110
	07, 09		09.	07. 88.	timore	— (a) OU IC. 12. 13. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	pp
06.2	us.e 0a	3,65		09.8 38,	toto	84 gr g Ø 0g g · · · · · · · · · · · · · · · · ·	TB
	ue		7774	ai.i 06.	die Tunnel	t, discount 10% on 500 bag Drop, # bag. 1 80 @ - Bo	०प् ७प
₹07	62 <del>2</del> 2		22	21 254	D. Va. & Oal	98 bag	on
38.2	01.8 06	3,00.8			aopamo	L—English, D 16 @ 25 Ou	33
89	10 8 33		2g	161 TE	Tallo		O[
	GZ.E	3.15	1771	og's og'		prinery 10 g 10 Go	18]
09°	ēγ. <b>č</b> 8	. 50	07.	08. 07.	ledonia.		di
44.	01'T 98	6 80T	9.50	fit 86	Juio T awo	10 00 0550 may 12 12 12 12 12 12 12 12 12 12 12 12 12	
48.			38,	00.E 28.	телиј	акв, дож	BE
****	0E. 0S	. 03.	98,	09	dley	nor	2987
91.1	62.8	92.9	97 1	89	текв Соп	Eu	
	(09. F 24	1166. [	. 57 (	172 6 36	Thequet 19thpad.		

Telegraphic advices dated Dec. 23d give the following ow York prices:

Bara Huver—964e per oz.

Gosprez-Lare -317, 50@17,60.

Lar—5.05.

Lare—5.05.

The following: g the latest

IRON—NO. 1, 822 00.

LEAD—\$5.05.

York Metal Exchange Market Report".

York Metal Exchange Market Report".

York Metal Exchange (Lake) issued at \$13,000; Lib.

York Metal Exchange (Lake) issued at \$13,000; Lib.

Lead Market et \$8,00,00.

Lead Market et \$13,000; Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Lib.

Li

#### Mining Share Market.

Stooks got rather a "black eye", this week, and went backward instead of advancing. There was no special reason for this break as and went backward instead of advancing face was no special reason for this break as the Comstook mines themselves are concerned. All the Virginis Enterprise says that Hale and Mortores has exposed twice says that Hale and Mortores has exposed twice say much ore as was shown at the time the stock sold for \$100. They now have at least \$1,000,000 worth of high grade or in sight, and the stock of the whole have at least \$1,000,000 worth of high. At the Segregated Belcher and Belcher and his har of the whole of the or reports are flactering, and the order the contained.

At the Segregated Belcher and Belcher and pertering, and the orders are flactering, and of seminated of seminated or contracted the contracted or the contained are contained at the second of the

PASTERRIZING THE AUSTRALIAN RABBITS.—
It is said that Pesteur proposes to kill off the rabbits in New Zesland and New South Wales by turning loose among them a few of their own species incoulated with the microbes of oblicken-cholers, which, he claims, will breed so much faster than even the prolific rodents that the latter will soon be exterminated.

List of U. S. Patents for Paoific Goast

List of U. S. Patents for Paoific Goast

Inventors:

Reported by Dewey & Co., Ploneer Patent

Solicitors for Pacific States.

From the official report of U. S. Patents in Daws Teady for immediate and convenient use. The Occupancy of U. S. Patents in Daws E. 
CIAMY FOR SECURING STERECTAYE PLAKES.

OILAMY FOR SECURING STERECTAYE PLAKES.

OLAMY FIRMEY, S. F. No. 374,667. Dated of such series everal means for classing the stereotype plate to its supporting bed in such a manner that the plate may be readily removed from said bed; but there are readily removed from said bed; but there shows the strick of the several methods.

The object of this may invention is to overcome the control of the series of previous fibe stricks of previous discussing the cadvantage of previous and more extensive has increased for better and more extensive ness. It will permit the use advantages, but will be as a peted for better and more extensive ness. It will permit the use of single blocks of an inexpensive obstactively of securing any streets on account of their chestocype plate of the practically the same size as the block; thereby particular and way with the necessity for variation.

Blower for STALSS. The STALSS.—Cear. J. Salands. J. Sackus, S. F. No. 374,384. Dated Dec. 6, 1887. This is a combination with an open representation with my manning size.

Backus, S. F. Mo. 374,334. Dated Deo. 6, 1877. This is a combination with an open it crone stove or grafe, of a vertically moving frome stove or grafe, of a vertically moving slide or plate, by which the opening may be olosed. The plate or ''blower." has projecting uge on plate-lugs may be supported when desired. The guides or obannels are curved outwardly at the bottom so as to throw the lower edge of the plate-lugs may be supported when desired. The guides or obannels are curved outwardly the blower toward the tothrom, when it is at its in the blower toward the from the blower toward the from the blower toward the forted may be supported upon any pair of steps at any pear of steps at any pear of steps at any of the interesting the from the ontirely out of the way, thus leaving the front of the interesting the front of the way, thus leaving the front of the interesting the interesting the front of the interesting the front of the interesting the front of the interesting the material front the material front the material cases to that class of driers for intil. Albis relates to that class of driers for intile the material of the material of the interesting the material of the paterial of the interesting the paterial of the interesting the material of the paterial of the interesting the paterial of the paterial of the paterial of the interesting th

Unis 1846, No. 374,697, Dated Dec. 13, 1887.

This relates to that class of driers for fruit, oct., in which baselets containing the material oct., in which baselets containing the material to be dried are suspended from a rotsching-wheel may be dried are suspended from a rotsching-wheel may be dried of the several movel points of constanction may be summed up as follows: The servers central radial arms admit of the use of a double separative of suspended baselets without causing the value of suspended baselets without causing the rot of suspended baselets without causing the youngest of support of the spill provide for the view of the front of the spill provide for the as may tall down out of the ordinary of the fort to box as the side of the spill provide for the state of the spill provide for the same wife of the spill provides for the spill provides for the spill provides of the shell provides for drawing of the side of the spill provides of the spill in the side of the spill provides of the spill in the side of the spill provides of the spill in the spill in the spill in the spil

#### Academy of Sciences.

egnibanorina bas abaslai ett to aweiv accitque, emy of Sciences, Walter E. Bryant read a paper on the "Birds and Eggs of the Ferellone on the "Birds and Eggs of the Ferellands." The lecture was illustrated by ster-At the last meeting of the California Acad-

from photographs taken by Mr. Emerson.
Dr. A. B. Stout called the attention of the
society to the fact that it was in danger of losing the lot in the cutside lands decided to it by
the Board set.

ing the lot in the outside lands deeded to it by the lot in the outside lands deeded to it by the benefied to it by the board of the supervisors many years ago. The Board of Education now wants the lot, which comprises two 50 wars, and is worth \$10,000. He was 100 wars, and is worth \$10,000. He was 100 wars, and is worth \$10,000. He was 100 
ADDUT 20,000 pounds of gipe as of Siskiyou, and ceived at the Oro Fine mine of Siskiyou, and she claim mill be worked with an elevator this

The Wenban mines at Cortex. Enreks county, are said to be netting from \$30,000 to \$40,000 per month.

37,427,—ERECTIONAL HORSENDO—E, W. Bing-37,459,—PURIFYING WATER FOR BOILERS— 37,467,—CLAMP FOR STEREOTYPE PLATES— Win Filmer, S. F. Win Filmer, S. F. Win Filmer, S. F. Win Filmer, S. F. By Soc.—ORANGE GRADER—J. W. Keeney, S. F. LOR WEEK ENDING DECEMBER 13, 1887.

S. F. Arthonome CLOTH-CLEANER—W. C. Meyer, Sr., Vall-jo, Cal., Vall-jo, Cal. Arthonome Close and Cal. Arthonome Close Cheractro Elevator Trap-Doors Styleyd.—Blacker Beensh and Box—Geo. W. Peek, San Luis Ohispo, Cal. W. Peek, San Luis Ohispo, Cal. W. Y. Y. Y. Y. Styleyd.—When Man Children Cal. Arthonome Cal. Arthonome Cal. Children Children Children Children Children Children Children Children Children Chi

1058-, Саі, 374,698.—Геціт-Деіек—С. А. Ріскіп, Sr., San 1066, Саі. 374,697.—FRUIT-DRIER—C. A. Pitkin, St., San Jose, Cal,

Jose, Cal. MACHINE FOR MAKING TOE CALKS—374,68t.—MACHINE FOR MAKING TOE CALKS—1, C. Kelly, Austria, Nev. Worm—Uoples of U. S. and Foreign Patents furnished or telegraphic order), American and Foreign patents or telegraphic order), American and Foreign patents inventors transacted with perfect security, at reasonable inventors transacted with perfect security, at reasonable inventors transacted with perfect security, at reasonable inventors and in the shortest possible time.

#### Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Sourwrist Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

WORTHY OF SPECIAL AGENCY. This is an improvement on a former invention This is an improvement on a former invention This is an improvement on a former invention of the consists in details of convenient means is provided for clearing the apparatus of moist beavy air from time to time without cooling avy air from time to time without cooling it off or lossing any great without cooling it, which is still valuable for drying purposes.

Vallejo, Solano Co. No. 374,690. Dated Dec. drying purposes.

Cloth-Cleaner. — Wm. C. Meyer, South

13, 1887, This invention relates to the class of devices for cleaning oloth, and especially to those used in four-mills for oleaning the flanner of the dust-collectors and the silk of the polity relations. The invention consists in the pening reels. The invention consists in the pening reels. The invention consists in the pening the constructions and combinations. The object is to provide simple and effective means object is opported as a first of the constructions and in the constructions are seen as a construction of the construction of t

T.O.W. STRANDARDA. M. M. Landenberg, S. F., assignor of one-neaff to W. D. Welson, Terevor. Transer Co., No. 374,686. Dated Dec. 13, 1887, 1887, There Go. Mo. 374,686. Dated Dec. 13, 1887, the standard backward from the top of the moldboard so that it presents ano obstruction to wooded and straw and prevents all orbiting of the plow from this cause. When working in pigh at the proposed such prevents and straw and prevents in morting in the moldboard without coming in contested by the moldboard without coming in contest with the standard, and no scomulation can take place against it. PLOW STANDARDS,--M. M. Laufenderg, S. F.,

Масниче гов Макиме Ток-Сагка. -- John С.

MACHINE FOR MAKING TOR-CALKS.—John C. Kaled Judes against the Really, Austin, Nev. No. 374,631. Dated Dec. 13, 1887. This oalk-making machine consists essentially in a movable obised of cutter and as nuclerlying table or arvil provided with a gists essentially in a movable of the outside with a depressed portion and an elevated portion are day as a clevated with coming in the shoulder made by the elevated portion in the cutting edge of the outside in cutter. The invention further consists in out from the edge of the work. The elevated portion a recess to permit the calk to be drawn out from the edge of the work. The object is portion at the shoulder made by the elevated portion are elecated for the work. The object is chine for making toe-calks.

Mill.-Stock ferebra.—Clifford F. Kendall, according to the preparation of the consiste milliers of various kinds to rolls or rolls, pullifiers, etc. The stock of various kinds to rolls and accomplination of davices. There is a great accomplination of davices. There is a great accomplination of davices. There is a great accomplination to consider the patent covers construction and a commine the area from the factor of davices. There is a great area gener to the rolls or other in a strangement of the patent covers construction and a commine the patent of davices. There is a great area from the fall takes about its lowes tor of elivery edge as a compliant of the rolls or other in a strangement of the patent of davices. The stocker and available is so that when the longer and even altered and broken up as to avoid all imarps.

Commine of W. Peck, San Luis Obispo.

Construen Blacking Brush and Blacking Boxering Boxering Box.—George W. Peck, San Luis Obispo. No. 374,696. Dated Dec. 13, 1887. This invention consists in a breah, the frame or effock of which on its back is provided with a spring metal plate, forming a clamp, and a spring metal plate, forming a clamp, and a

Our Agents.

Our Agents.

Our Agents.

Our Agents and the can and of much in aid of our papers and the cane of practices. The cane of practices are defined by selecting the cane of practices and encouraging theore. We intend to send none fluctuations and the cane of the

20 - 77 (20 cm.)

- 450 (10 condented)

- 450 (10 condented)

- 450 (10 cm.)

- 50 (10 cm.)

- 5

3.90 4.75 4.00 4.75 4.00 4.75 9.80 54.00 5.80 50.20 50.1 54.00 5.80 50.20 50.20 50.1 54.00 50.20

00.3 04.4 47 33 32.3 37.3 00.7 02.3 03. 04. 07. 03. 07. 03. 09. 07. 69. 38. 02.1 39. 20.1 00.101.1 09.

3.40 3.30 4.20 2.70 3.40 2.60

00.1 09. 30 1 00.1 01.1 00.1 01.0 00.8 48 00.8 48

2.50 2.02 2.10 2.00 2.20 2.20 2.20 2.50 2.50 2.50 6.00 6.00

02, ... 62, ... 03, ... 03, ... 03, ... 03, ... 03, ... 03, ... 03, ... 03, ... 03, ... 04, ... 05, ... 04, ... 05, ... 04, ..

52

401 60,1

00.8 £31 00.1 00.1 57.2 £8 00.4 £9.00 7 £9.00 £9

Sales at San Francisco Stock Exchange.

00.8 88 87 49 08.7

Sarage Sarage Selver King Silver Hill Silver King Scorpion O'nion Con O'nion Con

Morene, Morene, Morene, Morene, Misgarta, Misgarta, Moren, Moren, & O.,

Independence.

Julia
Julia
Julia
Justice.

Leady Wash.

Martin White.

Moxican.

M. Dlsblo.

Moxican.

M. Dlsblo.

Jurthorn Belle.



## ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Ejectric Motors, Dynamos, Tramcars, Elevators, Signals and all kinds of Electrical Systems for lighting and samission of power, either direct or with etorage Batteries,

For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

#### Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.,

#### ("DYNAMITE" or "GIANT") NILKO CLYCERINE

Blasting Powders.

Vigorit "LOW" Powder,
FOR REMOVING STUMPS AND TREES,
WORKS: California City, Marin Co., Cal.

ED' G' LUKENS, Manager

REPORT OF THE AQUEDUCT COMMISSIONERS.

# NEW CROTON AQUEDUCT, NEW YORK.

FLANT (by actual count from Table 13),

PROGRESS (by actual figures from Table 8). 

Average Weekly Progress in the best 10 Headings that used Ingersoll Drills

Exclusively (omitting all idle weeks)

Average Weekly Progress in the bast OHeadings that used other Drills Exclusively (omitting all idle weeks)

Difference of 20 per cent in Favor of Ingersoll Drills. 88.18

All beadings where ingersoil Drills were used exclusively have been completed, except the section under the ingersoil Drills and Air Compressors. Send for Description of Aqueduct, with the Aqueduct Commissioners, and will send thom by express on receipt of \$5, setual cost to the "Report of the "Report of the Aqueduct Commissioners," and will send thom by express on receipt of \$5, setual cost to the "Report of the "Report o

10 PARK PLACE,

Represented by BERRY & PLACE MACHINE CO.,

PARKE & LACY, Proprietors, 12 California St. and 21 Fremont St., San Francisco, Cal.

S.'00 DEWEY



Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agents in Washington and the capital cities of the principal nations of the world. In connection with our edimination and Patent Law Library, and record of original cases in our office, we have be offered home inventors by other agencies. The other advantages is at beyond those which can be offered home inventors by other agencies. The examination of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us often which are determining the patentability of inventions brought before us, enables us often which are not new. Circulars of advice sent examination of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us often which are not new. Circulars of advice sent free on receipt of postage. Address DEWEY & CO., Patent Agents, 252 Market St., S. F.

Bullion Shipments.

be pleased to receive farther reports: We quote shipments since our last, and shall

De pleased to receive further reports:

Con. California and Virginia, Dec. 17, 800,284; Eureka Con., 19, 826,000; Hale and Wordrone, 19, 86662; Bitchird, 17, 821,232; Lexington, 17, 810,208; Junifon, 17, 814,896; Africe, 17, 810,208; Lexington, 18, 803,800; Pollode, 17, 87536; Lexington, 18, 8337; Hanauer, 16, 83126; Germania, 14, 8337; Hanauer, 14, 84575; Crescent, 14, 8337; Hanauer, 16, 845,60; Lexington, 19, 847,680; Fannaria, 15, 8190; Hanauer, 15, 82560; Germania, 15, 81500; Morth Balle Isle, 20, 832,000.

#### Complimentary Samples.

Persons receiving this apper marked are requested to ensons desive its contents, forms of subgreed to examine its contents, forms as far and give it their own patronage, and, as far as practicable, aid in circulating the journal, and making its value more widely known to others, and extending its inducate entering the cause it faithfully serves. Subscription rate, if ordered soon enough. It shready a central, if ordered soon enough. It shready a subscriber, please show the paper to others.

#### Books on Working Ores.

By Guido Kustel, M. E.

the Extraction of their Respective Metals without
the Extraction of their Respective Metals without
guidesliver. By Guido Kustel, M. E. 1880.

This rare book on the treatment of gold and silver ore
quicksliver, by Guido Kustel, M. E. 1880.

This rare book on the treatment of gold and silver ore
quicksliver, it gives since and command
all of Med. It gives short and convice descriptions of
all of Med. It gives short and convice descriptions of
and working spheritations of furnatives, supplements
and working spheritations of furnatives, supplements
and working spheritations of furnatives, supplements
and so forth spherical since and constitute 186

and so forth spherical since and spherical since and spherical spherical since and spherical spher

# EMEK - NEBYAINE

Рното лив Моор Еискалис,

## Wax Electrotype Engraving,

BY THE BEST AND CHEAPEST METHODS. ZINCOGRAPHING, ETC.,

Оик Ием Рнотоскарнотурез,

Made Direct from Photographs, for Newspaper, Book and Job Printing,

Grand been than the condition of the condition of the condition and the condition of the co

Рното-Елесткотуреs, Рното-Zімсовкарня,

WAX PROCESS ELECTROTYPES, LANSFERS,

STEREOPTICON VIEWS,
COUNTERPEIT SIGNATURES ENLARGED,

ALSO, PHOTOGRAPHING ON WOOD AND OTHER LEGAL DOCUMENTS REPRODUCED.

## SPECIAL PHOTO WORK,

approved throcesses.

Designa, drawings on photographs made to order.

Designa, drawings on photographs made to order.

Engravity as of parties, foreign designation for an and from the sarty as possible, with fall description for any and the photographs and prince similar to those desired, and the photographs and prince similar to those desired and deep throceraphs and prince similar to those desired and the photographs and prince estimates. Call and see ordered and the process of 
#### DEMEY ENGRAVING CO.,

A. T. DEWEY, Manager.

OFFIOR WITH ILLUSTRATED PACIFIC STATES WEEKLY, 220

## Ores, Mining, and Commission, HORACE D. RANLETT,

420 Montgomery St., S. F.

UNION COPPER MINE, Calaverse Co. COPPER MINE, Amador Co Correspondent as Agent tor Smelters in London, Liver pool, New York, Boston and Baltimore.

Special attention given to management and sales of since and purchase and shipment of copper produce.

QUARTZ MINES FOR SALE.

## SAN FRANCISCO SAVINGS UNION

532 California St., corner Webb.

For the half year ending with December 31, 1887, a Dividend has been declared at his erfect of tear district. WHITE, Caphing of taxee, not been to the tear of the tear deposite, and fartee and sixty one-hundredthat the manner on ordinary deposite, free feet. Only per centr per annum on ordinary deposite, free caphing the period of taxee, performed the period of taxee, performed the period of taxee, performed the period of the period

## The Sparta Mines, Oregon,

property of the first and the factor itselfice, as present a work will give finded better freed itself, as the property to put in a flame by which means the property of the industry of the powder river divide, making available over the Powder river divide, making available over the roles are also forces of the riohest placer ground can find profitable employment here next, amment on the 5000-foot flame, and profitable employment here next, amment after the ormpletion of the 5000-foot flame, may after the completion of the 5000-foot flame, bare attracted general attention and much against a present a stratege of the training the solution of the foot in the gold and average \$10 to the ton in the gold and average \$10 to the ton in the gold and average \$10 to the ton in the gold and more than double that value in anyburcte, fined, and average \$10 to the openitude but a fined, and average \$10 to the ore time the camps in the United States of States. The next lead to the best camps in the United States and only 30 miles from relitored at the work of the orea of the base been worked here in areather of the bave been worked there in the United States will produce more gold them Spartes, though or some states and the state of the orea of the subput such that the rich placers, few if any camps in the United States will produce more gold them Spartes, done of ore some the them of the subput such and the subput such that such the rich placers, few if any camps in the United States will produce more gold them Spartes, though or some the such and the subput such that such and the such such and the such such and the such such and the such and the such such and the such and the such and the such ason's work will give much better results, as more miners have been engaged in the placers with good results, and it is believed that next the many guiches that surround this camp and much gold has been taken out, the average being about \$3.50 a day to the man. Fifty or donning the mantle of prosperity, I thought many of your readers might read with interest items from here. During the past summer about 100 Chinaman have been placer mining in the EDITORS PRESS:-As this old camp is again

Sparla, Union Co., Oregon.

#### Meetings and Elections.

GOULD AND CURRY S. M. Co., Dec. 19. Directors, Geo. R. Wells, Pres.; Chas. H. Firh, Vice-Fres.; Geo. Frier, Ebbt. Vice-Fres.; Jos. Marks, Geo. Frier, Ebbt. Vice-Fres.; Jos. Marks, Geo. Frier, Ebbt. Varian, and Frespointed secretary, and D. B. Lyman, superintendent. In his annual report Superintendent intendent. In his annual report Superintendent of dest organization of east orosecut on this level has been responded and extended 304 feet. The formation of east orosecut on this level has been respected and extended 304 feet. The formation of east orosecut to this point.

LOCOMOTIVE M. Co., Dac. 19. Directors, H. Havens, Pres.; G. H. Fish, Vice-Pres.; H. B. Mutrey, John E. Mills and J. H. Dawson. Isasc D. Smith was appointed superintendent and John Crookett, secretary. The company has an John Crookett, secretary. The company has an indebtednesse of \$3242.08.

OPHIE M. Co., Dec. 21. Directore, Obse. H., Fieh, Pres.; Gon., W., Havens, Vice-Pres.; Con., O'Connor, A. E., Hull, H. Zadig, M. Hoeditoh, and W. S. Lyle, True. The Bank of Wevada was chosen Treas.; E. B. Holmes, Sec.; and D. E. Lyman, Supt. The treasurer's report showed that the company had on hand \$17,701.94.

MOUNT DIRECO M. Co., Dec. 21. Directors, 517,719.

Wount Directors, W. Grayson, J. M. Shokwell, J. M. Shokwell, W. Grayson, J. M. Khowles, W. Heath, M. M. Krayson, J. M. Khowles, J. W. Grayson, J. M. Khowles, R. W. Grayson, J. M. Khowles, R. W. Grayson, J. M. Khowles, J. W. Grayson, J. M. Khowles, J. M. Khowles, and retarn search of California treasurer. In his repeat, the superintendent says: We began be not be of California treasurer. In his repeat, J. M. H. Shokley and the mill on Dec. 19, 1886, and the mill was mill set 10-stanp dry-creating mill was with steam of the control of the considerable of the control 
#### New Incorporations.

The following companies have been incorporated, and papers filed in the office of the Superior Court, Department 10, San Francisco: Lowe Sark Quartz and Garat A. Co., Lose Sark Quartz and Garat M. Co., 17th. Location, Nevada county. Capatel stock, \$1.000,000. Directors, W. W. Armanietons, A. W. Blundell, Rodney Smith, R. B. Symington and G. R. Watson.

Symington and G. R. Watson.

Chief Pacific Carl and Carle Co., Dec. 17th, Object, to develop the land and eathle resources of the Facilic Cast. Capital stock, \$2,000,000.

Directors, R. M. Moyer, J. H. Pennington, I. Directors, T. C. Chifford and Henry Eickhoff.

M. Day, T. C. Chifford and Henry Eickhoff. The following companies have been incor

## Iron and Machine Works.

## CALIFORNIA MACHINE WORKS,

WM H. BIRCH & CO., ENGINEERS AND MACHINISTS, C. San Francisco.

Steam Engines, Flour Mill, and Mining, Saw Mill and Machin Pook Crushers

Manulacturers of B. E. Henrickson's Patent Automs
tety Catches for Elevators. All kinds of machin
de and repaired. Brodle Rock Crushers, Machine Steam Power, Hydraulic, Steam Power, Hydraulic, Side Walk and Hand-Fower

#### SACRAMENTO, CAL. **DNION IBON MOBKS**

ROOT, NEILSON & CO.,

MACHINERY FOR MINING PURPOSES. Engines, Boilers, Steam

Flouring Mills, Saw Mills and Quartz Mills Machinery
one fetucted, fitted up and repaired.
Front St., let M & O Sts.,
Sacramento, Oel.

## Golden State & Miners Iron Works.

dernfacture Iron Oastings and Machinery of all Kinds at Greatly Reduced Rates.

STEVENSON'S PATENT

#### Golden State Pressure Blowers. Mold-Board AMAL GAMATORS,

Tret St., between Howard & Folsom, Sts

THOMPSON BROTHERS,

## ENKEKA FOUNDRY

29 and 131 Beale St., between Mission and How

MANUPACTURERS OF CASTINGS OF SVERY DESCRIPTION

Works, Mo. 315 Mission St., San Francisco. Special attention given to Woodworking Machinery, team and Gas Engines. Correspondence solicited. Williams & Orton, NUFRS OF GENERAL MACHINERY. SHTUNAM

## MINING ENGINEERS.

#### Civil and Mining Engineer W. A. GOODYEAR,

Address "Business Box A," office of this paper, Sa MINING EXPERT AND GEOLOGIST.

BOZZ E BBOMNE'

NO. 307 SANSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

N. W. SPAULDING

SAW COMPANY

SPAULDING'S Manufacturers of

inserted Tooth

CHISEL BIT

CIRCULAR

SAW MILLS AND MACHINERY 'SMES

188182 VON

AIDJUAGS.W.

17 and 19 Francisco. San Francisco.



dopper or Brass Screens for all purposes. Cali-Perforating Screen Co., 145 & 147 Beals St. S. F.

San Francisco, Cal. Shorthand, Penmanship, Typewriting, Book-keeping. T. S. 18 18 984 S. C. Chronic vol. com. vol. c COLLEGE BUSINESS

SHIPPING AND COMMISSION MERCHANTS,

Agents for the Mexican Phosphate and Suret, San Francisco, Cal.

Agents for Growers and Manufacturers. Charterers of Vessels for all Trades. Agents

Company's Products.

General Insurance Agents.

General Insurance Agents.

General Agents for the Pacific Coast of WATIOWAL ASSURANCE CO., of Boston, Mass. ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of Boston, Mass. Have correspondents in all the chief cities of the United States, Europe, Australia, India, China and the princi-islands of the Pacific. Purchase goods and sell California products in those countries.

PACIFIC ROLLING MILL

UP TO 20,000 LBS, WEIGHT,

True to patiern and superior in strength, toughness and durability to Oast or Wrought

Inon in any position or for any service.

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from \$\frac{1}{2}\$ to \$\frac{1}{2}\$ time the land per yard. Angles, Tees, Ohanne steel Wagon, Burgy, and Truck Tires, Plow Steel; Machinery and Special Shape Steel to STEEL RAIL'S from \$12\$ to \$\frac{1}{2}\$ pounds per yard. ALSO, Mealinca and Mercha Steel Wagon, Angle, Channel, and \$\tau\$ times, Fistons, Connecting Rods, etc. \$\text{Carnhage}\$, Stemuber, St

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL,

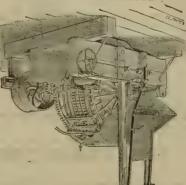
PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

# IRON

HINOKLEY, SPIERS & HAYES, Proprietors.

San Francisco OHICE'S SO L'YEMON! SI,

MARINE ENGINES AND BOILERS. Propeller Engines, either High Pressure or Compound Stern or Side-wheel Engines.



TUSTIN'S PULYERIZER.

# NGINES&BOIF

Either for use on Steamboats or for use on Land. OL VIL KINDS,

Water Pipe, Fump or Air Columns, Fish Tanks for Salmon Canneries

OF EVERY DESCRIPTION. Boiler Repairs Promptly attended to and at very moderate rates.

Desne Steam Pump.

SPECIALTIES:
Corlies Engluss and Tustin Ore Pulverizors.

DEAUE STEAM FUMP.
Agents and Manufacturers of the Llewellyn Feed Water Purifier and Heater.

SLEVN ENGINES'

ARCHITECTURAL IRON WORK, Ice and Refrigerating Machines, Shafting, Pulleys, etc.

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco. GENERAL MACHINE WORK,

#### PERFECT IIId

**MORKS ORE WET OR DRY.** 

rustin's Pulverizer

MISCELLANEOUS MACHINERY.-Flour

Crushing, Amalgamating Pans, Settl rs, Furnsces, Retors, Concentrators, Ore Feeders, Rock Breakers, Furnsces for Reducing Ores, Water Jackets, etc.

Works, Cages, Ore Buckets, Ore Cars, lumping Engines and Pumps, Water Buckets, Pump Columns, Air Compressors, Air Receivers, Air Pipes,

MINING MACHINERY.—Hoisting Engines and

MILL MACHINERY.-Batteries for Dry or Wet

Machinery, Powder Mill Machinery, Water Wheels.

First Premium Awarded at Mechanics' Fair, 1884.

Sole Lioned Menuacturers of the

States of California, Oregon and Nevada, and the Territories of Id Montana, Wyoming, Utah and Arizona. Lightest, Strongest, Chr Best Balanced Pulley in the World. Also, Manufacturers Medart Patent Wrought Rim Pulley

The Felimates Furmained Formant Street, AND APPURTENANCES San Francisco, Cal. San Francisco, Cal. San Francisco, Cal.

0 П DEEP

MACHINE WORKS

EVANS

110 & 112 Heale Street,

Office 40 Nevada Block,

Dynamos and Motors of all sizes for Conveying Power om Waterfalls for use in Mines and Mills, erected under aranty of performance.

Electric Reliways, and Apparatus for the Electric Transmission of Power.

Storage Batteries.

MOTORS, LAMPS

Keith's Electric Dynamos

Inventor and Manufacturer of

N'S'KEILH

SEND FOR CATALOGUES.

DOMNIE B. I. P. CO.

Standard Oil Company,
Cal. Sugar Refinery, Htc.

Tu ase on the PREVEUTIVE AND REMOVER

BOILER SCALE

DOWNIE EUCALYPIUS

For Sale by all druggiste,

THE H. H. H. Horse Littlemate Portion of the minimum to your feet. H. H. H. H. Horse Little of the H. H. H. H. Horse Little of the head of the leading remed seron the leading remed smooth of the leading remed successful straters and Stockmont for the horse of Sperines. Britises, Stiff Jourist Jourises, Stiff Straters and Stockmont from the Horses, Cuts and Stockmont has many timits from the Horses, Cuts and Stockmont has many timits from the Horses, Cuts and Stockmont has many timits from the Horses, Cuts and Stockmont has many timits from the Horses of the said Stockmont has a sery Johle before purchasing. Stock of the series of the Horses of the Stock of the Horses o

JOHN W. QUICK, Proprietor-

San Francisco Pioneer Screen Works, Orders promptly attended to.

PERFORATED SHEET METAL

Best and Cheapest in America.

BATTERY SCREENS,

GREAT REDUCTION!

H.H.H.

SI T SES HILBE SE"

BROH O

THIWENE

U. S. Wavy, Pacific Coast S. S. Co.

Market St. Cable Railway

SO4 MARKET ST.,

SAN FRANCISCO.

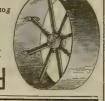
H

Mining and Mechanical Engineer ISBAEL W. KNOX,

AND PURCHASING AGENT POR

Mines Examined, Reports and Fedimates Furnished. Mines, Mining Machinery & Supplies.

Office, 287 First St.,



PORTLAND, OREGON.

SAN FRANCISCO, OAL,

BALT LAKE CITY, UTAH,





Nos. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN

Machinery

ENGINES and BOILERS. Mining Machinery, Steam Pumps, Wood and

SEND EOH CIHCULARS.

# BOILER.

A NEW AND RADICAL DEPARTURE IN

PER CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

Spring Valley Water Works, S. F. I. 200 H. P. Start & Co. Mills, Wheatport ... I 100 H. P. San Jose & Sauta Clara Electric I.

Southern Pacific R. R. Co., S. F. I. 75 H. P. Selby Smelting Works, Valley Bard Date California Cotton Mills, East Oak.

Junction

Jan California Cotton Mills, East Oak.

Junction

Jan California Cotton Mills, East Oak.

Junction

Jan California Company.

Junction

Jun The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

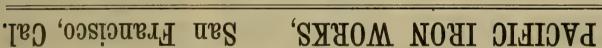
antimediag mechanics of LATISST Disclox and one one of the base is the state of the

MINING MACHINERY,

Ohicago: New York: 100 N. Clinton. 145 Broadway

BRAYTON & CO.,

HEINE SAFETY



R. S. MOORE, Superintendent,

BOILER

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Manufacturers and Sole Agents for the Pacific Coast for

SAFETY, Has the Following Advantages:

DURABILITY,

ECONOME'

L. R. MEAD, Secretary.

AND FACILITY OF INSPECTION and REPAIRS.

60,000 Horse Fower now in use.

Guaranteed More Efficient than any other Boiler made. Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Works Hucter Bros. & Co., California Jute Mills, and other pluces.

RETRIGERATING MACHINERY for Steamships, Breweries, and Cellars.

WILSON'S PATENT GAS-PRODUCER.

STEAM HOILERS of all descriptions.

SUGAR MACHINERY—Steam Mile, Vacuum Pans, Clariflers, Double Effects, etc.

STEAMSHIPS—Steam Yachts, Marine Engines and Bollers, Screw Propellers, Contrilugal Fumps, Steamsh propellers, Contrilugal Fumps, Steamsh propellers, Contrilugal Fumps, Steamsh propellers, Contrilugal Fumps, Steam Captains, Captains and Minist Company; 60-steam Captains, Captains Mill for Quartz Mountain

Mining Company. Mill for the Alaska Mill and Mining Company; 80-stamp Mill for Quartz Mountain

OUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces of all kinds.

AIR COMPRESSORS—Rope Power Transmission.

HYDRAULIC PUMPLING and Hoisting Machinery.

WEOUGHT-IRON WATTER PIPE a Specialty. Mora.—Have just completed order for 85 miles of 44-inch place of into its pring before West Company, San Francisco.

SAW-MILL MACHINERY of all kinds.

SAR-MILL MACHINER Of all kinds.

SAR-MILL MACHINERY OF A linkinds.

SAR-M

**MATER TUBE** 

occommon pulleys; will not break in transportation.

(ron pulleys; will not break in transportation.

the full weight of silver agreed upon, and are tested be-fore leaving our works, shereby avoiding the complaints about light weight, made so often before we started in this branch of industry. NOTICE.-All our plates are guaranteed to have

## JUSTINIAN CAIRE, Agent,

221 & 523 Market St., San Francisco,

Assayers' and Mining Material.

BATTERY SCREEUS AND WIKE CLOTH

HYDRO-CARBON ASSAY FURNACES Agent for HOSKINS'

CAR CHILLED MHEETS

No. 108 FIRST STREET.

FURNISHED ON APPLICATION. GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES

FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

NOTICE TO GOLD MINERS!

SAVING

SAN FRANCISCO

IN QUARTZ, GRAVEL, OR PLACER MINES.

LOL

CHAS, R. STEIGER. STEIGER & KERR, TVS' M' KEBB

FOR SALE.

I Mew l'S-inch, 35 H, P. Engine.
VERY CHEAP. Apply
130 Sansome St., room 12. S Triumph Concentrators.

BACK PLESS of the MINING AND SCIENTIFIC PARSES (un-bound) can be had to 35 per volume of six months. For year (two volumes) 55. Inserted in Dewey's patent bind-er, 69 cents additional per volume.

W. T. WENZELL,

Analytical & Consulting Chemist,

Oppraite Second St., San Francisco, Call Careful natysis, unitaritive and quantitative, mete of products, poisons, test, feeds, mederines, industrial products, poisons, etc. Correspondence solicited. 532 Market Street, Dreite Second St., San Francisco, Cal

AND RAILROAD CASTINGS.

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal.

MEDAL AWARDED, MECHANICS, FAIR. IRON CASTINGS of all descriptions.

NOVELTY AND PLATING WORKS,

MADE OF BEST SOFT LAKE SUPERIOR COPPER

OVER 1400 ARE MOW IN USE. Concentrations are clean from the first working. The wear and are merely nominal. A machine can be seen in working order and ready to make tests at 220 Fremont (\$275.00) F. O. B.

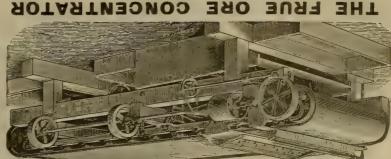
FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

The Montana Country of Carlos of Car

Protected by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1881; February 20, 1883; September 18, 1883. Patents applied for. Since the above was written the 20 Vanners having been started gave such satisfaction that 44 addi

ADAMS & CARTER, Agents Frue Vanning Machine Co.,

Room 7, No. 109 California Street,



OF VANUING MACHINE, THE FRUE ORE CONCENTRATOR

MACHINERY. AIR and WATER POWER COMPRESSED

NATIONAL AIR COMPRESSORS. RIX & FIRTH, 225 and 227 First St., San Francisco.



SAN FRANCISCO, CAL.

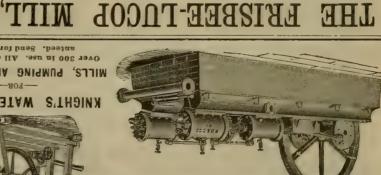
200 Sold on this Coast. Has less repairs than any other Drill. NATIONAL ROCK DRILL.

WINEBS, HOBSE MHIW'



KNICHT'S WATER

MILLS, PUMPING AND HOISTING.



SINGLE OF DUPLEX, STEAM OR BELT POWER.

Cor. Fremont and Mission Sts., San Francisco, Cal.

# YABNIHJAM

SOLE AGENTS FOR

AND BOILERS, AND ROLLES ENGINES' MILLIAMSON BEOS' HOISTING

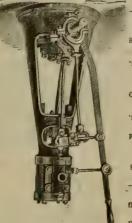
OLLO SIFENT GAS ENGINES. PAYNE'S VERTICAL AND HORI-

PICKERING ENGINE GOVERNORS

NATHAN AND DREYFUS OILERS. TAUITE CO.'S EMERY WHEELS AND MACHINERY. INDSON ENGINE CONERNORS'

DISSTON'S CIRCULAR SAWS, KORTING INJECTORS AND EJEC-

H. W. JOHNS' ASBESTOS PACK-TYNE YND BODIEK SYM MILIS' ING CO', REPLING VAD PACK-



MILL SUPPLIES AND LUBRICATING OILS.

FROM 2 TO 100 H. P., ALWAYS IN STOCK

**ENCINES** Sug BOILERS

YACHT ENGINES,

WEBBER CENTRIFUGAL PUMPS. PUMPS, IMPROVED STEAM BICKLOED, S DOMES DEIFTS. BEMEUT & SOU'S MACHINISTS CHINISLS, LOOFS' NEM HYAEN WYNDE,G CO',S WY-MACHINERY, WOODWORKING NACHINERY.

STURTEVANT BLOWERS AND EXHAUSTS. PERIN BAND SAW BLADES.

HOLLOWAY FIRE EXTINGUISH-BEADLEY CUSHIONED HAMMERS. WASSEY'S STEAM HAMMERS. BAADLEY CUSHIONED HAMMERS. TURBINE WATER WHEELS, SHIMER MATCHER HEADS.

most rapidly and economically. Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Cement Rock, and other brained milling machines

All substances when ground leave the mill in a finished state—no regrinding being necessary
Feed. Wearing parts of Steel and Forged from

End A Mark A Mark A CREEK MILLING.

A CENTRIFUGAL ROLLER MILL

#### MILL COMP'Y, PRISEE-LUCOP

And 461 Howard St., San Francisco, where a Mill can be seen in HOOKER & LAWRENCE, General Agents, NEW YORK 145 BROADWAY, NEW YORK

## JOHN T. SULLIVAN,

Boot and Shoe Maker. SO Fourth St., Pioneer Building, [BillOINIS INVENTORS DEWERLOW.

Maker of the famous Miners' Shoe

Coods sent by mail or express.

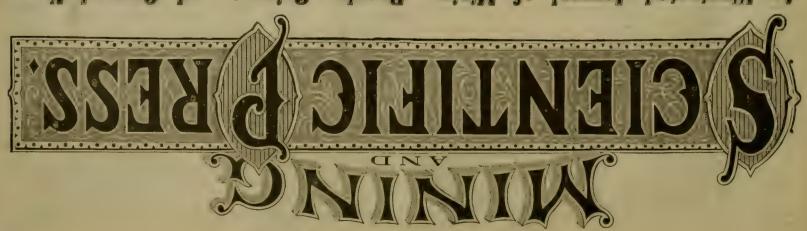
TUBBS & CO.

San Francisco Cordage Factory.

Established 1856.

957 Market St., VIEWS OF Mechanical Photographers, RUNNELS & STATELER,

Machinery, Models and Buildings



Illustrated Journal of Mining, Popular Science and General News.

SAN FRANCISCO, SATURDAY, DECEMBER 31, 1887.

BA: DEMEA & CO.

gle drums, as required. The drums may be straight or cone-shaped, or smooth or grooved.

The cuts are self-explanatory. On the 30-

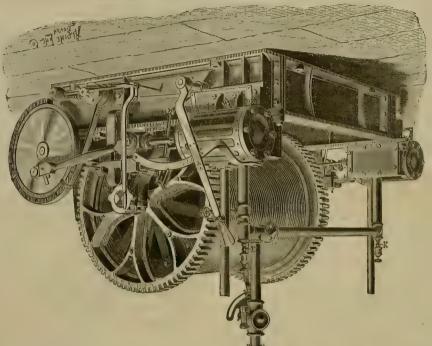
Standard Mining Engines.

Operating and the one man one-man to the mineral regions of the makers are frequent.

The outs are self-explanatory. On the 30- West, the Oorps of U. S. Engineers, has been making the oneside world known little or gines. These outside world known in the interesting, as a constant of what is interested to metallinear in the interesting of the fact interesting the interesting of the metallinear in the interesting of the fact interesting the interesting of the metallinear in the interesting of the fact interesting the interesting of the fact interesting the interesting of the fact in the interesting of the interesting of the fact in the fact in the interesting of the fact

あるいまでは

SINGLE-GEARED STANDARD MINING BUGINE.



DOUBLE-GEARED STANDARD MINING ENGINE.

holders, and operations regumed immerate mixed by the liter.

In 1885 bitaminous cosl was the most value for a superation to pay the liter.

In 1885 bitaminous cosl was the most value fraces. They can be arranged so the mineral product, but in 1886 it was sur-first length or a superation to pay the liter.

In 1885 bitaminous cosl was the most value fraces. They can be arranged so inclined whom desired. Parks & Lacy, 8 Califors for a superation of the measure.

In 1886 it was sur-first length or action of the measure in the desired. They can be arranged as the mineral product, but in 1886 it was sur-first length or action of the measure.

In 1886 it was sur-first length or action of the measure in the desired. They can be arranged as the mineral product, but in 1886 it was sur-first length or action of the measure.

In 1886 it was sur-first length or action of the measure in the draine, it desired. These forms if the draine, it desired. These forms if the draine, it desired. These forms if the draine, it desired. The sur-first length or action of the measure. Mexico passing a la placing a heavy

In 1885 bituminous cost was the most value. They can be arranged so Extra length or extra-diameter drums are furshly mineral product, but in 1886 it was surted that the operator stands or in the passed by pig iron, which had a higher total rear of the drum, if desired. These forms of this street, are agents for this machinery for rear of the drum, with double or sin- this coast.

edt bas "srevir beeb" ent gaofs yew The great army of self-employing min-ers, toiling silently and in their small

give support to more people and diffuse more wealth throughout the community

their small claims about these great pro-perties are doing; and yet these latter

Montana are accomplishing, even to the details of their business, but they do not know what the 10,000 miners working

these that site way into the papers. The general public knows what the Plymouth in the California, the Ontario in Oslitornia, the Ontario in Teah.

the reason that searcely anything about

tad seairquetae gid wel edt tnoda sbaer losses, their successes and failures, because these being conspicuous matters, arrest the attention of all. Everybody of their big mines, costly plant, enor-mons output of bullion, their profits and

being done by the large companies-much

The Unobserved Workers.

then is done by the big corporations.

panies with their extensive operations country at large more than the big comdowns; yet, taken as a whole, they are fairly prosperous, and really benefit the placer workers most desire. And so these silent workers have their ups and advent of the rainy season, which the drifter, the hydraulicker and most other The river-bed miner deprecates the early draulic operations in certain localities. pleaty of it, the same being true of hyble only when there is tree water and can be worked only in the wet season, and then in most cases only for a short time, but they pay well while the warfort lasts. Ground-sluioing is practical ble only ground-sluioing is preserved and his only ground-sluid in these water and odanges, and sometimes closely watch their opportunities. The dry diggings their operations largely to the weather only in the wet season, the business in which they are engaged being more or less precarious. They have to conform some cases only in the dry and in others The labors of these men are for the most part intermittent, being carried on in petence and sometimes a fortune besides. selves and those dependent upon them in comfort, accumulating generally a comways enough money to maintain themlive water courses, on the mountain-sides, and in the deep canyons, make al-

will probably be formed out of the lienthe lienholders for \$41,000. A company for over 20 years. The mine was sold to ni 000,000,81\$ revo beenborq and ti ayas awot ent betroqque ent bas noillud revlis been sold at Sherid's sale. The Reveille THE Manhattan mine at Austin bas

and large investmente.

wons the Austrian railways are blooked by anow.

lo yillidadorq si eredt tadt betats si TI

yield from four to ten per cent, and saves 40 to 80 per cent of the mercury usually lost, as well as returning many chemicals. All this at a small relative charge, and with no uncertainty or great charge, or existing plant.

ployes is recommended in all possible ployes is recommended in all possible osses. This process increases bullion

covery to which no one but Dr. Rae oan lay olaim. This superintendence of the

ated, there is a peculiar value in this dis-

invention. Particularly in Central and South America, Mexico, and wherever great silver mines are oper-

ohemicals, almplifies the process of reduc-tion, and decreases expense, relatively and actually, Every large mine will find a great saving and increase of output due to this simple and thorough invention. Particularly in Central

to the pulp, restores the meroury from a floury to a globular form, saves it, and much bullion, increases output, saves

electricity, cheaply and safely generated

The properly regulated action of a powerful continued ourrent of dynamic

the solution, electrodes, agitation and every possible point, and are impregnable, in priority, legality and originality.

No. 364,372, June 7, 1887. These five patent, the current, 1868; No. 123,932, February 20, 1872; No. 364,372, June 7, 1887. These five

866, February 5, 1867; No. 62,776, March 12, 1867; No. 83,091, October 3,

in the following U. S. patents: No. 61,-

application of electricity (voltaic and dynamic) is completely covered by Dr. Jules H. Eas (as the original inventor)

and printed matter have been verified and their truth indorsed. The whole

proper charge. The patents, testimonials

estat of neo nam taggilletni bus estatuo estat ot rotnevni estat ot rotnevni estat da danom e ni

process is simple and cheap, and any soreports, authorities and general facts confirm the claim of the inventor. The

beanirq IIA : troqer sid mort esnebnoe vention, The following statements we

Montana, and reports tavorably on the positive and undeniable value of the inmills now successfully working on the process in California, Nevada, Utah and

to the records and reports of the four

ists. He has made a very complete report of the inspected by the inspected the machines now building here, and virginia City virginia City where a plant is to be applied to Mr. Mackey's par-mill). He has had access the contract of the con

M. Bates and other New York capitaltem of metallurgy in the interest of ex-Governor Cornell, General Negley, L.

Mumber 27.

The election for new officers which had been ordered by mail was announced as follows: President (term expires 1888), Horace See, of the William Oramp & Sons' Ship and Engine Building Co., Philadelphis; Vice-Presidents Citems expire 1889), W. T. G. Baken, of the Elimore, Md. Henry G. Morris, Philadelphis; Vice-Baken, d. Woodbulting Co., Bladelphis; C. J. H. Woodbulting Co., Bladelphis; C. J. H. Woodbulting Co., Managers Co., Boston, Masse, Treasurer (term expire 1890), Stephen W. Baldwin, of the Penns vapire 1890), Stephen W. Baldwin, of the Pennsylvania Steel Co., Tevridence Steam and Pennsylvania Steel Co., Tevridence Steam and Sallers of Chicago, Ill., and Morris Papers Read.

Rellers of Chicago, Ill.

Papers Read.

Renry I. Snell of this city presented two papers Read.

At the opening of the second day's session The New Officers.

At the opening of the second day's session the report of the Tresaurer was read, showing a members, 35 associate members, 43 junior members, and 15 life members, 15 honorary members, and 15 life members, Lt was stated that the receipts for the last year were \$10,536.20, expenditures \$10,413.03.

The election for new officers which had been conducted by mail was announced as follows:

formed.

He next turned his attention to heat and the next turned his attention to heat and electricity, touching upon their present and electricity, touching upon their present and possible ness. He closed by saying the society fail of es factor in making still more wonderfail of be a factor in making shill more wonderfail discoveries than those already made.

A paper, entitled "A New Principle in Sweet, and was discussed by Messre. Strong, Sweet, and was discussed by Messre. Strong, Webb. The queries, What is the best form the suction? Should the pump be single or of pump to use with divorance lift is the suction? Should the pump be single or of pump to use discussed by Mr. Smith, J. C. Briggs of your used driven wells and eingly or in groups? since and deptie, and single or in groups? Have single or and with history of what tree Haute, Indiana, C. J. H. Woodbury of what single or single or in the successful in the second depties and depties and single or in groups?

Terre Haute, Indiana, C. J. H. Woodbury of Terre Haute, Indiana, C. J. H. Woodbury of the strong of Brooklyn.

grees.

He traced the history of the art, showing that the traced the history of the professions. He traced the poldest of the professions. He traced whe had been accomplished with iron, used in manutateruring a nail and a locomotive; with cost, of which 400,000,000 tons are mined with perfoleum, "the world's and vith perfoleum," the world's said, the greatest beginner has overcome, he said, the greatest obstacles; rivers, mountains, and oceans have alleged to him. He then and oceans have alleged to him. He then the hord Cenis and SE. Cotentains, and oceans have alleged the practice of the Month of the said. "The median is not only unique, but a briefly described the latter, "the approaches to stroke of genius."

The mechanical engineer, Mr. Babcook, said, but a succession of the Pharache and irigates but a latter of the Pharache, when Barr Morbaly in the time of the Pharache, when Barr Morbaly in the time of the Pharache, when Barr Morbaly in the tiver of the Pharache, when Barr Morbaly in the time of the Pharache, when Barr Morbaly in the tiver of the Pharache, when Barr Morbaly in the tiver of the Pharache, when Barr Morbaly in the the Wile Them.

[From our Special Correspondent.]

Proceedings of the American Society.

Месбаліса Евдіпентя.

A MUSHROOM PLANTATION has been established in a disused railway tunnel at Edinburgh. The mushroom beds occupy about 800 yards of the tunnel, whose total length is about three-quarters of a mile.

Since and power of the blastechine and long size and power of the blastechine and mind and which were, at that the ability and the blastechine and bloom on the blastechine and bloom on the bound of gluonite have been hauled from the a distance of 80 miles, to ship away. Thirty-four thires are of 80 miles, to ship away. Thirty-four carloads, or nearly three-fourths from whence it has been seint to make that of manufacthas been seint to make that of manufacthas and such as been seint of the that of manufacthas and such as been seint send that of manufacthas and such as the state of the person of the thirty of the

modifications as experience should prove necessing the modifications as experience and proved modifications as experience should prove necessary.

Before the furnace was entirely finished I was called out of the country, and was absent done in a way very different from what was underplated in the planning of the furnace. Indeed, it was all done from one side. Ore, the throat. Naturally, there was eastfolding and out the amount of fuel consumed and dux were dumped into one segment of the amount of fuel consumed and dux west the only trial with the cyling and the amount of fuel consumed excessive; the furnace soon became deformed, was uneven, and the amount of the furnace of any other of such effect a short campaign, was put out of along the furnace of any other. It proved that a furnace of any other of such form would fail with neother the other of such other furnace of any other. The subsequent exceptional performance of the furnace on any and the furnace of any other furnace on the furnace of any other was not an unnuant of any other furnace, and to the formation was any of the furnace of any other furnace, and to the great proportionate also and power of the plast-engine and boilers, which were, at that that there are the only only which were, at that that there are the order of the plast-engine and boilers, which were, at that the at that the at the thine at least, unnaual.

difference of the formation of the following of the following oncolusions from comparisons of refliger with the following from the following paper, the season and following from the fo

rection was in the form of a communication to the society, by James E. Wells of Quincy, Plumas Co., Cal. His remarks were as folin the transactions of the institute. The cor-12th, was cited the experience at the Midland blast furnace. There were some errors which were corrected when the paper was published shove subject, published in the PRESS of Nov. In the extract from Mr. Walsh's paper on the

#### Irregularities of the Blast Furnace.

the days of the prospector are employed in drillling and picking, inekead of simbestly wandering
over mountains and through guiches and parks
which an eye to the next good camping place,
the season and so the next good camping place,
has disappeared from view. Then, too, the
depth of the sheft or length of the tunnel must
best witness to the amount of work done, and
not a meandering line drawn over a soiled map,
to abow an alleged traveled route. No, the
odd-time prospectors as a class are rapidly dying out in Colorado, and those who follow it no
old-time prospectors as a class are rapidly dro.

should be classed rather as miners than prospectors, for as miners they have a fixed purpose and a determination to accomplish something, which could not always be said of many
of the men who regarded all material gold shot
glittered, and with whom the greatest strike
glittered, and with whom the greatest strike
glittered, and with whom the greatest strike
was a sucker who was willing to grub-stake
them.—Denver Republicans.

time of the year with returning prospectors, large towns in the State were filled at this exactes in Colorado, and is now rarely met with except in the frontier camps. There was a time, and not many years past, when all the The typical old-time prospector is becoming

#### An Old-Time Prospector.

when they get settled up and their tills are full, and they get settled up and their tills are full, and more or less of it is returned to oiroulation in of various ways.

The product of the mines of the country has been very large brigge properties that the beautiful not be auspended on many large properties that was a course of the ower has been as the that was a source of revene to its owners, and development.

As a source of revene to its owners, and development. Where we have not resence out growth has not been as repid as the baye or easen whether or Leadville when the become the bear of revene to the complaint. Of the have no reason whether to complaint. Of the have no reason whether the seen as repid as the baye of either Butte or Leadville when the bonnes truck them, but it has been as repid as the hard of either Butte or Leadville when the bonne struck them, but it has been as repid as the baye on a struck them, but it has been a seed and the country is comingup slowly, but permanently, on her merits. This is well the permanently, on her merits. This is well but permanently, on her merits. This is well the prospects dovelletions and reckless the mines into our midst, and year by year the output be to our the prospects dovelop into mines and the country on her need into our midst, and year by ear the output betweet the output of the wagen-roads money will increased and the general prosperity of the wagen-roads money will be invested in the country in larger amount and more reduction of more wagen-roads money will be invested in the finest outlook for a great minimum of the finest of the west, and is it is well as the finest outlook for the first of the wagen of silver greatly encouraged by the firmes of silver and advanced.

The first of any part of the Weet, and is it is well as a silver of the first of the fi

a more flourishing condition. During the days and the rimes are better and business of all kinds in a more flourishing condition. During the days ing large populations, so many people being free of having a ment be appearence of having large populations, so many people being overtacting the case to say that half of these ment and the ment of the case to say that half of these men and the number of the found of the country and everybody in it. Others, who had means to be during the country and everybody in it. Others, who had means to buy provide and send early provide and send everybody in the country of this class have succeeded and the provide and the country and everybody in the country of the country and everybody in the country of the country and everybody in the country of the country of the country and everybody in the country of the country but times are better and business of all kinds in a more flourishing condition. During the days and the four statement of the four of the River has ever experienced, says the Inter-Idano. To be sure, the towns do not present that lively appearance of four tow hey says ago, This is the most prosperous season Wood

Wood River Prosрегоца,

MATURAL (MAS,—It is never eate to dispense with the services of a competent engineer in places where natural gas is used in place of coal. This gas will not burn perfectly with it. I certain amount of air necessary for a perfect combaction of the gas can only be determined by expenience and the watchfulness of the energineers.

Situated above Big Bar, they have made all strangements to work on a large soale. This arrangements to work on a large soale. This miss was worked some years ago, and through destruction is but under the able management of destruction, who has been working some men off and on the past year, they have exputually got the property opened in proper shape. The rock goes from \$20 to \$5000. He has contracted for his loisting works, and has a five-stand work in an arastra, run by water power. Great on the Moterian and the mine at a season be comed down, and there is an abundance of made of the Moterianne river, where timber can be boomed down, and there is an abundance of and can be traced a long distance. The strated is not the season of the season, Dec. 17, 1887.

At the Cleveland Mine, On the Astoria, two men are running a crossout sunnel. This is a very prosperous location,
and this fall will be opened as much as possible.
The Sargent mine is again under way, as well
as the Mamnoth Tunnel, McKinney and Valparaise. Sufficient rain has fallen for this part
to all start, but not with the volume of last
winter, and unless we have copions rains it will
winter, and unless we have copions rains it will
winter, and unless we have copions rains it will
who have the forethought to have steam as well
as water.

At Middle Bar,

Mo. I in 168 feet on what is known as the east 190. In 168 feet.

Tunnel Mo. 2 is in 150 feet. By running in Tunnel Mo. 2 is in 150 feet. By running is a late, they will be under a 120 foot shaft, which was sunk on the ledge, very riob ore was found, many thousands being taken out. In this tunnel there are also two crosscuts north and south 50 feet sach.

In the lower tunnel they will be under the late of the sach of the s

Situated in Hunt's Gulch, was next visited for the first time, and I was surprised to see the catent of the developments. I found Tunnel I.V. I for the east the catent is known as the east ledge. Тре Grenoble Міве,

the courteous Supt. of the Amador gold mine, obtained special permission to examine subtential appearations of the surface is comprised to Supt. Of the surface is comprised of Sacres of pathonous was thoroughly examined.

The surface are so may be comprised to the surface the comprised of Sacres of pathonous the Mother Index has a follows: The Supt. has a pretainty home and office comprised which is a surface are so follows: The Supt. has a surface are as follows: The succession of the surface are as follows: The Supt. has such as the surface are as follows: The succession of the surface are as the super control of the west of the super control of the super con

property, and after going over the surface the optained apecial permission to examine that EDITORS PRESS:—Your correspondent, through the courteous Supt. of the Amador gold mine,

Amador Gold Mines.

We admit, unindorsed, opinions of correspondents.—EDS.

CORRESPONDENCE.

#### Gold and Silver Coinage.

oial centess of Europe in order to learn the feasibility of establishing by international standard a fixity of ratio between the two The President has transmitted to Congress the report of Edward Atkinson, who was specially designated by him to go to the finan-

precious metals in the free coinage of both. Atkluson summarizes the result of his inquiries under four heads, as follows:

First.—There is no prospect of any change in the Present monetary system of the European States which can modify or influence the financial policy of the United States at the present time.

time.

Second—There are no indications of any
Second—There are no indications deborities
of the several States visited by me which warrant any expectation a that the subject of a metallic treaty for a common legal tender,
metallic treaty for a common legal tender,
ocupled with the free coinage of silver, will be
complete and the present sime by
the contract of t

by the many of the many of the state of the by the observed at the present time of the state of

concentration or particular concentration to paraly concentration of particular acts and well-developed method capable on a set and a method method set as and inexpedient for the tale to the initiative in United States again to take the initiative in promoting sotion for the general adoption of a pincefulic legal tender, coupled with the tree coinage of aliver, for the reason that such a coinage of aliver, for the reason that and action is misconstrued and may tend to retard action is misconstrued and may tend to retard at the reason that the tree coins are the promote the object simed at.

action is misconstrued and may tend to retard rather than to promote the object simed at.

WORKIWO TAILINGS.—The ancient fortunether who condensity predicted that by the time the Chollar mill elected, \$4000 would be course and ringle down Sir.mile Cangon calify, predicted that the would be course and ringle down Sir.mile Cangon calify, in withing 500 miners, sluicers and millmen to pick that the mills get a far larger percentage to the cangon miners, sluicers and millmen to of the sasay value of the ores, etc., the owners of beauties of the ores, and mill selective took a special calification of the cangon make miners wages, of the cangon mainted cannot be selected to the cangon mainted cannot cannot be cangon who have caught tailings prospective bore their most roseste appearance, an Markerperspector, for and showed beyond all cavil that the canyon who have caught tailings in cannot be caugon, who have caught tailings in case to fire the salue of the canyon could cackle if it ever afforded remule the canyon who have caught tailings in cannot be caughon, who have caught tailings in cannot be canyon, who have caught tailings in mill works about 346 to notes as of me that the cannot all and an an appearance of the canyon down the canyon who have canyon the control of the canyon down the canyon don't forum the sangon and interpretation of the cannot be canyon don't the canyon down the canyon don't be canyon don't the canyon down the canyon don't be an an another that the anthurent can be weed in the alucion can be worked to over 50 per cent of their mill works about 346 to over 50 per cent of their canyon of the canyon down the canyon down the Constend to over 50 per cent of their canyon to over 10 their cannot be set to over 50 per cent of their dayly secope of wealth chows the anticipation of their seasy value. The canyon to over 10 their cannot be set to over 10 their canyon to over 10 thei

to motavining 20 or more seeds, a depression of the seeds, the pod occurring between each of the seam occurring between each of the seam of the the seeds it in its modes and resembles it in its medicinal virtues, but requires about one-third medicinal virtues, but requires about one-third The Exercise seams is so offers there is The Exercise to the seams is so offers there is little inducement for the gathering or use of little inducement for the gathering or use of our native one.

SILVER CITY MINES.—The mining situation at allver City was never more lerorable than at allver City was never more lerorable than the blown and Lectuits are working more manners. All of these mines are paying all running expenses and netting their owners bandsome profits. The great drawback of Silver City mines is the lack of adequate milling lack of adequate milling lack of adequate milling lack of adequate milling lack of superservations.

which is described by Dr. Vasey, Government one of the mainstays in the old ayetem of bousehold medication, we beg a few moments' attention to the subject of American senna If our readers have not developed a memory of the whole senar and the whole senar family through memory of the which we have the senar teach teach the senar teach teach the senar teach t

Experiences with Blowers," in which were given a number of irteresting tables relating to the value of experiences and be relating to a caperinents upon blowers under various the velocity of air under pressure, the descripe ton of experiences and of experience briefly described conditions, and a discussion of the results obtained and the strings and Ventiliar and the scribed of the strings and Ventiliar which Mis. Buell uses in his own office. The papers were discussed by C. J. H. Woodbury, Daniel Ashworth of Pittsburg, Prof. Denbor, Daniel Ashworth of Pittsburg, Prof. Denbor, The rest paper, entitled "Internal Friction of Wor. F. Alattes of Scratton, Seelton, Pa., and Prof. Huston.

The rext paper, entitled "Internal Friction of an entitled "Internal Friction of Non-Condensing Engines," by Prof. Behor, and H. Thurston of Cornell University, derived the gine of this class operated with danger and an extra paper, entitled with daying a start for all loads, independent of the nagaritions, and having a throttling governor, is continuous operation of a well-cate from angular to one of the load or the power developed, but is that the troop of the load or the power developed, but is that the results opening to engine will reduce by Healty R. Towne, the cangine will reduce the internal friction.

The paper was discussed by Henry R. Towne, the rengine will reduce the internal friction. Webber and William Kent of New York.

Oberline man was discussed by Henry R. Towne, in which he ofted a number of diffinium land an interesting paper on "Power-Fress Problems," in which he ofted a number of diffinium land an interesting paper on "Power-Fress Problems," in which he ofted a number of diffinium land of the ofted a number of diffinium land of the land of the order of one of the operation of the development of the ofted by the ofted and number of diffinium land of the ofted and number of diffinium land.

The paper was debated by John J. Grant of the offered by the description of the offered by the offered by the offered and n

The news comes from Boston that an Eastern metal firm has offered to take the entire production of all copper mines in this country, down, in consequence of the recent fire, for the cent ng years \$80 per ton. This the market price reaches \$80 per ton. This will have a bendency to get the copper mines of this section of Meyada developed. There are copper-bening veins, which have every spearance of being extensive, in the Harmony are copper-bening veins, which have every spearance of being extensive, in the Harmony are copper-bening veins, which have every spearance of being extensive, in the Harmony and also in Gold Kun district near Golonda. It is believed that these mines could be profits as some of the orea sarry from 25 to 36 per cent of metal.—Silver State. Nevada Copper Mines.

(Concluded next week.)

o cuces. efreet the electric railway car was met, and a number of the party got on board for a short ride. The various excursions were under the direction of a committee consisting of Frederick B. Miles, Walter Wood, Jos. J. M. Ashton Hand and J. M. Dodge. (Concluded a set speek.)

Middletown, Ck.

Motte, among which were the Baldwin Locothe Bergert & Logel Brewing Co., Wm. Sellera

& Co., Williamson Brow, and the Southwark

Foundry & Machine Co., the Keystone Light

and Power Co.'s Incandescent Electric Light

Foundry & Machine Works, Otto Gas Engine

Morks, and the Spring Garden Pumping Sta
Reasington Engine Works, Otto Gas Engine

Myorks, and the Spring Garden Pumping Sta
Mensington Engine Works, Otto Gas Engine

Myorks, and the Spring Garden Pumping Sta
Mensington Engine Works, Otto Gas Engine

Myorks, and the Spring Garden Pumping Sta
Reasington Engine Works, Otto Gas Engine

Myorks, and the Spring Garden Pumping Sta
Reasington Engine Works, Otto Gas Star

Mensington Engine House, Machine

Myorks, and the Spring Garden Pumping Star

Mensington Engine House

Michmond, Here the Purpose by J. O. Keim, super
Intendent of the Port Richmond depot of the

Michmond, Here the party disembarked and

Michmond, Here the party disembary, and

Michmond, Here the party and essels now

Motor Star of the extensive works, the elaborate

to that of the members of the Works, the obsorted

Michmond, Here the pumping cool.

To have the wear of the Government.

The pays were the bulls of the versuels and

Mich esteys were the bulls of the versuels and

Mich esteys were the bulls of the versuels now

and estew the members of the company, and

dent, and other members of the party and other

moduleted the man of the works. Hoisting

the Visitors. The party was met at the Morking the

now approaching completion, were inspected by

mensions of the Com

press.;

The paper was debated by John J. Grant of the American Sewing Machine Go., Philadelthia, Wiltred Lewis of Wm. Sellers & Co., Philadelphis; John Coffin of the Cambria Iron Philadelphis; John Coffin of the Cambria Iron Middletown, Ck.

THE POUNDAL.—The term "poundal" some-times met with in mechanical works signifies that amount of force which acting constantly will produce in a pound mases a relocity of one foot per second. This is equal to shout one-palt an onnee, since the acceleration due to gravity is about 32 feet per second, which ex-erted upon a pound of matter would be equiva-tered upon a pound of matter would be equiva-tered upon a pound of matter would be equiva-tered upon a pound of matter would be equiva-

American Senna,

Month is described by Ut. valey, dovernment becauses, The word of his recent reports. The convol, the source, the graving is reproduced from this source, the making the control of the convolution of the convolution of the control of the control of the convolution of the control of the contr



AMERICAN SENNA-Osesia Marilandica.

the leaves of two or three species which grow in the leaves of two or three species which grows are making to the country of the states we have a species we have about 20 here. This is a vigorous plant, having the sort of the states are incorrectly and the country of the states of

#### A Now Amalgamating Pan,

duction of reverse currents within the pan, which cause the harder and softer particles of the pulp to erode and disintegrate themselves amalgamating pan. The peculiarity is the pro-AND SCIENTIFIC PRESS Patent Agency for an August Soderling of Bodie, Mone county, has just received a patent through the Mining

edt noqu rebnirg a sa toa ot Hesti Isiretam edt the counter-currents he is enabled to cause any means complete, and this inventor believes he has discovered that by the production of mercury or chemicals. This action is not by the two opposing surfaces will grind and reduce it as much as desired, in the presence of muller the material is caused to pass, so that ler or mullers rotating above dies fixed in the bottom of the pan, and between which and the -lum s to sasson by asq oft ai bessle si doidw ng pans, it is customary to grind the material, -temegleme to notionstance visiting and all by their action upon each other.

with grinding shoes. The pan has a steam bottom and a muller other parts of the material.

sled gest-wheel and pinion. central cone of the pan and has a feather or key by which it is connected with the muller. This hollow shaft is driven by means of a bevor cone extending upward above the central cone of the pan, and it is driven by means of a hollow shaft which extends up through the the pan to the outer. This muller has a yoke between them and the shoes of the muller the material is caused to pass by the centrifugal motion of the muller from the inner portion of Dies are placed in the bottom of the pan and

A shaft extends up through the hollow shaft, and has a gear-wheel fixed upon the opposite side from the other gear-wheel, this one pinion serving to drive the two shafts in opposite derivations.

doidw. Truorem edt diw betamaglama ed lliw the chemicals employed during the process, and erode and disintegrate each other, and the by d mon by social will be seeked upon by softer portions composing the pulp or slime to low the mullers, and canses the harder and rents forms a circulating current above and beinner muller moving in the opposite direction. This action produced by the independent curing current, which is thrown outward by the will come in contact with the oppositely-movslots and throw it toward the center, where it risl from the outside of the pan through the and having their sides curved, so that when re-tating the tendency will be to carry the matebetween the blades, these slots being angular, chereto angular blades, thereby forming slots stirring device comprises rings having fitted posite direction from that of the muller. This which connects with the muller corresponding with it in shape, and it is connected with a stiring device which is driven by it in an opcone extends down outside of the inner one, which engages with a corresponding keyway in the hub at the upper end of the cone. This The upper end of the solid shaft has a feather

ring rotating in the opposite direction from the in the ordinary grinding pans; but the isolated is placed in the pan for the purpose. The pan, with the steam bottom, dies, the muller and driving gear, is similar to those used

in the ordinary grinding pans, but the isolated in the torbied the the footsting in the opposite direction from the muller and without contact with it or action other portion of the pap, produces an action among reaster than cam be accomplished by any amount of grinding, the time being no greater than each ordinary grinding. The smount of power required is only that parameter that isolated ring, which may be made to run either faster or slower than the relation of the great-wheels, in the sizes of the gear-wheels, which we are ordinary grinding the fall great while the scales of the great while the state of the great while the scale distinct the sold distinct the sold distinct the fall should be account to the sold state of the precious metals contained in them; but by the addition of the tendend subtracting tonter an unschinery and the excessive west of the greates the striking points outposing currents are acting all the way around greaten and so far from the edge.

Mr. Soderling state the striking points of the precious machinery and the effective action is much operation about one-third the reduits of the greater of the state of the par, and so far from the center who operation about one-third the radius of the par and so far from the center with operation about one-third the radius of the pan under the sold sold into the pan and sold sold in the pan of the pan, and so far from the dege.

Mr. Soderling states the size of the pan of the pan in the season of the pan, and so far from the season of the pan, and so far from the center with our greater oose of 1 abor and repairs, and but the dedge.

At greater cose of 1 abor and repairs, and but the dedge.

At greater cose of 1 abor and repairs, and but our greater the differences and, ores, or tailing drive them, and by this greater economy he is enabled to work slimes, sand, ores, or tailings of a lower greater as to the center of the energy of a lower greater season of the season of the season.

while in case of war they would be to her an with her Morth American possessions would really be to England a good riddance, since they prove in time of peace only a source of expense, speaking of it only in a jocular way. Partin that; the people, other than a few officials, timent, and a much attenuated sentiment at try. Loyalty in Canada has become a mere se with serious opposition from the mother councould be carried, as it would not, probably, meet States, and there is little doubt but that measure once proclaim for annexation to the United minion Parliament from New Brunswick, at vice of Mr. Ellis, liberal member of the Do-

liberal and popular form of government. redueup yns mort dostds elideod denisgs ydruoes erom s bns sexet beonber duods gniddon yss od finally, they would in such event enjoy entire gate to a large sum, and which, unaided, they will hardly be able to pay themselves; and, pay their public debts, amounting in the aggrethey are so anxious to secure; then, we would country great gains. First, there would be the advantages arising from the commercial union annexation, inure to the inhabitants of that to England no detriment, there would, through While parting with these Provinces would be stement of weakness

ical notions, onstoms and habits of thought carried with them from this side, are still alpeople, having retained and cherished the polit emigrants from the New England States. The wick, were originally settled, in large part, by the Provinces of Nova Scotia and New Bruns erly portions of the Dominion, more especially the inhabitants of British America. The east at home as an integral part of this Republic, as

institutions, or who would at once feel so much world so well fitted for the enjoyment of free There is hardly another community in the

ness, finds apt illustration in the experience of the two peoples in British Columbia, On the conform to our ideas and modes of doing busion this continent, and how readily these latter most as much American as the rest of us. How readily, when brought together, we Americans harmonize with the British colonists

Hager, Judge Hoffman and Inspector Lubbock, as the successor of J. H. Freeman, recently of removed from the local inspectorship of

ended by the board, consisting of Collector

CAPTAIN CHARLES WILSON has been recom-

obvious reasons why these people should seek snoh alliance, and to that end adopt suitable measures for bringing it about.

ants apply for admission, there being many and

Provinces into the Union, should the inhabit-

reason why we should not receive these Eritish

before this time have been effected.

But be that as it may, there appears no valid

a large American population in the country, it is a large American population well be that its actual annexation well

sufficiently rich and extensive to have retained

be said the Province was practically annexed to the United States, and had the mines proved

British Columbia become, that it might almost

sbout their movements, the largest liberty con-

knowing, or indeed concerning themselves

slaiofto tanmarevod edt tuodtiw sgaiggib edt ince by inland routes and proceeded directly to

migrants and pack-trains came into the Prov-

authorities on either side being consulted. Im-

were projected and built without the local their objective points localities on the other,

Trails starting on one side the line, having for

only a few years before in a bitter wrangle.

or cared when they crossed the boundary—that boundary about which the two countries were

American into British waters and no one knew

come Americanized, Steamers glided out of

extent had everything in a few months be-

ily into use. Though in a strange land, we Californians did not feel like strangers, to such

of building and our system of trade came speedcurrency was at once adopted, while our style

ing business came soon to largely prevail. Our

American customs, manners and modes of do-

working the mines than they had been sub-jected to in California; not only so, but

hardly more restrictions on their occupying and

country, which was thrown open to them with

edt to stastidandi edt to osla tad esitivodtus

were cordially welcomed not only by the

thousands of Californians who rushed thither

discovery of gold in that Province in 1858, the

property having been vouchsafed to all. sistent with safety to life and the security of

to noitaluqoq entire ent bib ancenego

#### Annexation of British Provinces,

Press again appears, we wish our readers one and all a "Happy New Year,"

PRESS, and assist us in enlarging our list of sub-

call the attention of others to the merits of the

liw sacrate bio rac that begod it It is hoped that our old patrons will

-or ed or snoitgirosdus not sime for somit boog a si emulov

in contemplation, among them an increase in the number of illustrations. The close of a

and editors to improve the paper constantly. This coming year there are several new features

It is the intention and desire of the publishers

PRESS of general interest to all line largest for PRESS To SERRY

siderable space to, and endeavor to make the

nany other branches receive constant attention.

bas, escring, manufactures, popular science, and

the mining industry. The index on the last page of this number shows what a great variety

history of mining for the precious metals on the Pacific Coast of the United States, But its columns are not devoted entirely to

the files of the Press may be found a complete

have been made from time to time have been all ustrated. In

tadi ygzullatem bas gainim ai staemevorqmi

ьу which so much has been accomplished. The industry, described its progress and the means

correct the gradual advance of the mining

mining for the precious metals was confined to a comparatively small area of the conntry. Since then the mining field has enlarged immensely. The Prezs and witnessed and optimised the regions of the mining of

mining industry. When it began its existence,

Close of the Volume.

Mechanics,

Our home industries on this coast we give con

berebiects has been considered.

As 1888 will have commenced before the

shadowed by the late message of President Cleveland, is going to be carried out by us, that a free-trade policy, even to the extent forenow stand between the two countries they will find themselves mistaken. If they calculate they hope to accomplish that end as matters effecting such union is well understood; but if That a majority of the people of the British Provinces of North America are desiron of of Canada, on the 3lst day of January next. neets at Ottawa, the capital of the Dominion commercial union with the United States will be introduced and discussed at the approaching session of the Dominion Parliament, which a gaimtof to acitesup eat that betoeque at II

But that such revision, when made, will go to the extent of admitting into this country any early undergo some revision is conceded by all. The our customs thirst emoteus and tedT they may find themselves disappointed.

them, is open to question. the staple products of these Provinces free, to we wen lowering the duties now imposed upon

ure that will, of course, some day be brought about. When this shall be done is with us a matter of little consequence, since we cannot helped or hurt by it.

The first is a much helped or hurt by it. political alliance—in other words, through their annexation to the United States; a measafter, and that is by forming with us a closer with ne a Commercial Union, and thus possess themselves of the advantages they are seeking There is one way, and only one, whereby the inhabitants of British Morth America can form

nots and industries, protecting the latter from borq emon ruo diw stotiteques ont home prodpart of Great Britain we must treat them as w on the north. So long as the latter remain a gent we have only to reach out and take in Mexico on the south or these British Provinces and should at any time such need become stringreat stress for more people or more territory; own, more than we can settle to advantage in a quarter of a century. We are therefore in no have yet large areas of unoccupied land of our as the entire United States, is capable of sustaining even a sparse white population. We one-fourth of that vast north country, as large the course of the next three or four years. Not habitants, a number that will, through natural in increase, be added to our present population in British America contains about 5,000,000 in-

Let our northern neighbors, following the ad- | Hulls. as will prove adequate to that end.



V' L' DEMEK'

DEMEX & CO., Pablishers.

Office, 220 Market St., N. B. cov. Front St., S. F.

Terms of Subscription.

Annual Subscription, \$3. New subscriptions will be declined without cash in advance. All arrestages must be paid for at the rate of \$3.50 per annum.

Advertising Rates.

Loudon Aceut—Alperd E. Ann, 63 and 64 New Broad Street, E. C.

Our latest forms go to press on Thursday evening Address all literary and business correspondence frait for this paper in the name of the firm.

Entered at S. F. Post Office as second-class mail matter

SCIENTIFIC PRESS PATENT AGENCY.

DEWEY & CO., PATENT SOLICITORS.

Saturday Morning, Dec. 31, 1887. SAN FRANCISCO

#### TABLE OF CONTENTS.

EDITORIALS.—The Unobserved Works; Standard Mining, Engines; The Rae Electric System of Metal-iourgy, 417, Peasing Events; Close of the Volumes, Annexation of British Provinces; A New Amalgamat-ing Pan, 420 Bad Methods in Mining; Orographio Systems of Chemody and Metal Constructions.

Annexation of British Provinces: A who Amagamark ing Pap, 420 Bad Methods in Mining; Orographic Features of Colorado; The Advance in Coal, 431.

ILLAGSTRATIONS.—Single-Geared Standard Mining Engine, and Fabrica of Colorado; The Advance in Coal, 431.

ILLAGSTRATIONS.—Single-Geared Standard Mining Engine, 417. Orographic Pentures of Colorado, 431.

MISCHILLAN BOUS.—Mandred Blast Furnance, Mechanical Engines; American Senna; Gold and Silver Copper, and Coll-Time Companies, 418.

ALS Opening Minest, Mergines, 428.

ALS Opening Minest, Mergines, 428.

ALS Opening Minester, 418.

ACSEPTUL INFORMATION.—Oil from Grape Sends; Mechanical Engines; American Sends, 408.

ACSEPTUL INFORMATION.—Oil from Grape Sends; Mechanical Mechanical Mergines, 1819.

Sends; Possibilities of the New Furnation Colorage, Sends; Mechanical Mechanics of the Mergines, Mechanics of Mechanics and Mechanics; Mergens, 
'ard'; To Keep Plants Throughout, wood anching, Savduag, 'bridgels Heat; To Know Pure Gilding; Making it of Shoes in Less than One Hour and a Helf.

#### Business Announcements,

Amelgametine Plates—E. G. Denniston, Dividend Votice—German Savings & Loan Society.

#### Passing Events.

since some have been compelled to close down for want of power. The rain will have the were greatly in need of water to run their mills, all over the State, was welcome to the miners and tarmers of California. The quartz miners The rainstorm of this week, which extended

conditions of railroad rates, etc. that they are making no money under present ing to a reduction of wages in that part of land of la looked upon by some as one of the steps look. and Idaho Companies, in Idaho, last week, is and the mines and smelters of the Philadelphia The closing down of the Minnie Moore mine effect of starting up the stamps again.

tage of the rise of the market. its crude state to New York to take advanai beqqids ed lliw not reg 328 revo bleiy lliw The enhanced value of copper has caused activity at the mine. It is said that all ore that the Newton copper mine, Amador county. 5000 tons of copper ore now on the dumps of emos tesor of ebem gaied era stangagararA

of San Luis Obispo, was destroyed by fire on Sunday. The loss is estimated at \$50,000. PART of the wharf at Port Harford, the port foreign rivalry by the imposition of such duties

#### The Advance in Coal.

portion of the neighboring plateau upon the Pablo. In making a cut through a ridge about tio use, A mew tool mine has been discovered to use the line of the California & Mewada raile of a mile beyond San road about three-quarters of a mile beyond San Amador county, only furnish enough for lossl and railroad consumption. What little coal we have in this State is of poor quality for domescounty only produce a small proportion of what they formerly did. The lone coal mines, The Mount Diablo mines in Contra county. Coal has been found there, but it is of poor quality and undetermined quantity. and opening of extensive coal mines in that many being engaged in transporting lumber. It is stated that San Diego has a soheme on foot to offer a reward of \$50,000 for the discovery tion in Southern California has caused a much greater demand for coal than ever before, and there is a scaroity of vessels to carry it, so on our coast collieries. The increase of populabave taken their cargoes elsewhere this season, and we have been more dependent than usual spips which usually come here laden with coal There is something like a coal famine in this State just now. The article is very searce and prices have advanced materially. The English

time. Captain James Smith, the principal owner of the road, howedt ta Tettem edt ot biag saw 30 feet deep, the workmen found some pieces of coal. No attention

As indicated upon the accompanying diagram, our attention will be chiefly confined to the southern third of the Colorado highland, with In a paper by Theodore B. Comstook on "The Geology and Vein Struotine of Southwest-ern Colorado," before the American Institute of

formations upon the adjacent plains do not ex ceed 4000 feet above the sea-level. whereas the lowest portions of the sadimentary more than 14,000 foet for the greater portion, o sdgid fanigiro as esseribai sase esserione gradual slopes beyond. In the highland area by wide plateaus starting abruptly at eleva-tions of 7000 and 8000 feet respectively, with 75 miles, and is bounded on the east and west equare miles of highlands, or mountainous country, practically all above 10,000 feet in altitude. This tract has an average width of the central zone comprising more than 20,000 there will be recognized three well-defined north and lead three decad. features of Colorado in a generalized manner, Cometock says: If now we look at the orographic Mining Rogineers, the author furnishes a diagram, which we herewith reproduce. Mr.

Orographic Features of Colorado.

their own purses.

even the most sound and legitimate, and their in-to be taken into account in estimating their inasi reactions; it reaches into other industries, men notorionely unerrupulous, singly because of their known sbility as mine manupulators. But then this is a practice not confined to minstare of this worthless stock before making his escape from the city. There are, in these East-ern towns, speculators who ally themselves with market. That he failed to do so was due to the adroit knave would make for the goods a lively edt tadt noitatoeque ent ni eoirq boog a ta ti unloaded on the California residents of that oity It is not long since a man from this coast, who had here enriched himself in many ques-tionable ways, went on to New York and there

these people being not unwilling to avail them-ni this sort of talent to put money in

intent. There are those to whom the perpetra-tion of a smart triok commends the trickster,

proved a greater detriment to legitimate min-ing. Not slways are the parties who suffer through these palpable frauds guileless of evil

tact that he put off on his dupes the last a large amount of mining sheres known by the tagendous onw tud , desidur resees to be sees rubbish, but who bought

such reckless disregard of common sense and Getting back to our subject, it seems to us like this: While there is no other industry that so invites the investment of capital as gold инага примения ... CHILLIANT FAR

MHITE RIVER UASTAJS

-bnems eritne dtiw teem bluode vrteubni of license may be indulged in while seeking after and recovering them. This is all wrong, and by those who purpose embarking in this common business rules as in mining for the precious metals. Just because they are precious there seems to obtain the ides that all manner and silver mining, there is hardly any other in which so much loss occurs; and thus for the reason that in none other do men engage with west (the Colorado plateau, or Western plain at these places, requesting them to obarter of Hayden's survey). This high belt forms the available tonnage to carry coal to San Francis-great continental watershed, but the sctual co. San Pedro and San Diego. The vessels

sion reached by every man connected with or its its manner sharing the responsibility of its dry, and nine times out of ten there will come of it surprisingly good results. The determination to so run a mine should be the first concluwell be dispensed with. Run a mine as you run a stone quarry, a woolen-mill, an iron founyear sgaixh yonel bas seidiuftreque doid ating these metallic products is a rough business, but much dead work. Digging out and beneficisbasd-bash on—vraremmmraqua a rot enim revis ing enterprise should be wary and exacting to the last degree. They should stop all leaks, figure close and study retrenchment on every and. There should be no place in a gold or hand. There should be no place in a gold or those charged with the management of a min other important pursuits. As regards the fit-ness of experts and employes of every kind, sesential in the inauguration and conduct of be observed in carrying it on that are deemed ness and that the same care and economy must cantion is necessary when engaging in this busi-Let it be understood, once for all, that the same

nana practices, than which nothing has management. ishment would have a tendency to check these oftener had is much to de regretted, and much to be a few convictions followed by adequate pun-

Bad Methods in Mining.

the property, of which he has an elaborate and well-written, if not altogether reliable, report. With the aid of a middle-man he succeeds, Louis, Chicago, New York or other Eastern city, and there attempts to negotiate a sale of business is usually managed, it being something when we consider the manner in which this transous causes, as becomes readily apparent these losses are due to other and wholly exstood. In assuming, as is so often done, that the fault lies wholly with the mines, a grand mistake is made. In a large majority of cases majority of these complaints, we regret to say, are well founded. But not so generally nor yet so well are the causes of these losses under-Numerous are the complaints made of money lost in mining ventures and investments. Though frequent and heard on every hand, a

obase and work it for the expected profits it will to be taken in yield, or, more likely, osloulate to incorporate trinsic worth, with a large nominal capital and passes a large nominal capital and This company intend, may be, to keep their purlet us suppose, in forming a company to buy the mine, provided it besrs out on further in-spection the representations of the vendor.

eacht eredwai ered these ti engaged and sent to examine it. the mine, to which end an expert roval a casoquiq nisit several no last of serif place them on the market. But, sorads to redmun taory a guinesi

their quantity and quality very closely and understanding their neprentations. He enough that an expert chould be good judge of ores, estimating bne egbelwond lastering aft ni doing thought of the series and reserving on one one one of the series of the serie out imputing to them any merce-nary purpose, special weakness or besetting sin, it may be said that they are too often wanting more essential particulars. Withni eta alancieselve eseta taen ni eta alanciese pro ni fineiche sesso feore or will not here undertake to spe-oifically point out. Suffice it to to some the contract of the co fatally, in that they make choice rebanid of tgs ere seinsquoo

capable of doing, and thus their employers, trusting to their advice, are very often misled yet this is what but few experts ever do or are plain the same that they may bave due weight in forming business ealenlations. And enould be able to comprehend as well all the conditions bearing on a mine, favorable and to so ex-

often err in their oboice of a mine superintend-ent, selecting, instead of a tried and experi-Having begun wrong, these companies are very apt to continue wrong; as they usually err in their choice of an expert, so do they just as at the start.

aimply of what may come through the employment of the well-meaning but incompetent ex.

pert, What is liable to happen through the employment of the expert ready to betray the We have been speaking, it will be observed, end are of the paring little or no practical ac-gued man, one baring little or no practical ac-queintance with the husiness. The outcome is what might be expected—difficulties, disap-pointenants and a final loss of the money in-

may be left to be looked after by their victims, who have their remedy against them a crim-inal suit. That recourse to this remedy in is used in the contract of the contract and the contract because the contract of the contract and contract because the contract of the educated experts, are simply swindlers, they fraudulent mining schemes is undoubtedly true. But as that class, which includes very few much so as many suppose. That there is a large class of men who make a regular business of getting up and promoting interests of his employer we will not here com-ment upon, except to remark that this class is not at all numerous—not, in our opinion, so

SENATOR STEWART is Chairman of the Senate

committee on mines and mining. A very sp-propriate suppointment for the Senator.

tudents have switched off on to a full course in

that most of the Columbia School of Mines

has so increased the demand for architects

IT is stated that the boom in Western cities

parion. What has been the progress in the progress in the prion? What will be the progress in the

another thousand years hence ere it will occur

a twelvemonth. It is a thousand years since the combination last appeared, and it will be

ese and the various lines of steamers plying on the coast of China for many years. The

Miki mines. These mines are situated in the violnity of Magasaki harbor, Japan. Their product has been extensively used by Japan-

are to load coal at the Takasima, Karatz and

watere of Chile and Peru use immense quantities of this coal. With favorable weather, sailing vessels can reach San Francisco from

edt ni gnisinto seitifanoitan anoitav lo slessev

and German merchant steamers and the war

to be chartered at Valparaiso and Callao will load coal at the mines of Lots, Coronel and Lebu, situated on the south coast of the Chilean Republic. The large fleet of English and German receiver the seconds of the seconds.

paraiso, Callao, Hongkong and Shanghai by prominent firms in this city to their correspondents

structions have been sent to Val-

vein and discover its extent.

It is said that telegraphic in-

Coos bay variety. It burns to a white ash. A gang of men has been set to work to open up the

ance. It leaves no marks on the fingers when handled. Shown to local dealers, they declared it the

The coal is quite unlike that of Mount Diablo, being a hard, lus-trous quality of anthracite appear-

ety has been made for six months.

acres of the land when the discov-

amination. In anticipation that the ledge may prove valuable, Oaptain Smith has bonded 60

been brought to Oakland for es

pounds were taken out and have level of the track and came upon a substantial ledge, About 500

he sent out some workmen, who dug down five feet below the

matter. On Friday of last week

ever, has been investigating the

nese mines in 60 days. The vessels that are to be chartered in China

WE shall write three 8's in our date-lines for

What has been the progress in the last

next? Here is a field for contemplation !

oss the Pacific in about 40 days.

fuel from these Japanese mines can

economical development of each is inseparably connected with its intimate geological atruct-

and it will eventually be recognized that the

section has its own history to make for itself,

mi vrteubni gninim elderabianos a lo alasw

Park, South Park, San Luis Park), each of which is to become the pastoral and agricultural bul-

lithological components. These peculiarities have outlined the four great intramontane depreseions of Colorado (North Park, Middle pressions of Colorado (No

fest in the geognosy of the two areas, although they are nearly identical in early history and

of the belt there is a semblance of uni-formity in the three trends, which is not only lacking, but almost reversed in the northern

conform in its bearings to either of the other half

highland area, though no less tortuous, does not

It with the course of this watershed. It said to rebrod mreast the the set of the

nental divide, but that its trend is by no means

to the plain (or the mess country) is itself a mesandering line, quite as tortuous as the conti-

western face of the highland, where it falls off

lations and make apparent the fact that the

south and east through the middle of the cen

to south, thence east, south, and southwest across the zone in its northern third; thence

divide is a very tortuous line passing from north

COLORADO

ончаявояо

forming a remarkable loop in the district tral third, then bending abruptly westward, and senthward, and senthward,

A glance at the diagram will reveal these re-

This typical divergence is equally mani-

пэвр

partially independent metallurgic center.

# made from grape Surbay. In Italy, oil is now made from grape seed. According to the Kever Surbay oil is now and efform grape seed. According to the Kever of the seeds are separated by year, on being removed from the wine-press. It has some attention as the seeds are separated by a farm and afterward subjected to a cleaning process. The man and afterward subjects of the seeds are separated by a farm perfectly clean and wall dried; they we when it is the perfectly clean and wall dried the greater the yield of oil. The surface of the milling values so on set entire, of the strangement of the milliphones. As soon as the boliving of the set of the milling to the solid set of the formation of the perfect of the milling to the bolive; the formation of the policy from the bolive; the formation of the set of the USEFUL INFORMATION.

Major Arthur B. Litchfield, the mining engi-The Proposed sait Lake & Los Angeles Railroad.

Lake Herald says: neer and superintendent, has been for some weeks over a portion of the country where the troposed ". Nevada line" will pass. The Salt

And the control of th

Opening Mineral Regions.

POSSIBILITIES OF THE MEAR FUTURE.—A contemporary indulges in the following suppositions in regard to what we may be likely to whethere in the near the near the near the near the near the fores in regard to what we may be likely to withous in regard to what we may be likely to but of a great deal has been accomplished within the last century in the way of invention, but we think the last century in the way of invention plished within the possibilities of the future is a substance that will be accomplished within the possibilities of the future is a substance that will have that cocan ships will be intended in the following what motion. We believe that cocan ships will have propelled. There is in the ocean and as the ocean, and as the ocean unlimited power. A boat weighing the ocean unlimited power. A boat weighing the cocan unlimited power. The separation of the ocean, and as the ocean unlimited power. This cocan cocan unlimited power. This cocan the cost will be near the region of the ocean, and as believe that believe the point is a togelate. We believe that the rest will come across the continent of the region will stocked with estimate the stream of a mile and the stream of the cost. We believe that the rest will come across the continent of the region of the place of the stream o

A KINDLING-WOOD MACHINE.—A machine has been brought out for cutting old timber into firewood, and tying it into bundles ready for asle. It consides essentially of a chopping for asle. It consides essentially of a chopping kind so that achine in lengths of about the machine in lengths of about the wood. They pass out of the machine into the wood. They agretion, settles them into the smallest bulk. They are these formed into bundles by mechanical means, compressed and bound by wire. A firewood bundling machine, worked by a pedal, has also been introduced.

Malla Walla Statement, as least one seem of the Walla Walla Statesman, as least one seem if it walla Walla Statesman, as least one say did with it is sawdust's a contract braving just been made with a four-mill close at hand for a supply of sawdist sufficient to keep the mill-engine at the formula close at hand for an engine in the carrier of \$50 per day, the power for the carrier being the contract of \$50 per day, the power for the carrier of \$50 per day, the power for the see at the float the carrier of \$50 per day, the four-mill. Even at the float contract of \$50 per day, the four-mill. It is not their tool in half, the present expense for this item being \$100. It is present expense for this item being \$100. It is doing as well with its britten despised dust, but it is a well with its higher to despise dust, but it is a wall with its millions of the see it is a well with the seem of one seem of one present in a series.

TO KEEP PLANTS THROUGHOUT THE WINTER WINTER WITHOUT ARTHOUAL HEAT.—A new principle for keeping plants through the winter without a trificial heat was recently shown at Regent's Park, London, with the plants grown in them last winter. The essence of the invention is though as aballow layer of water. The water through a fabrilly by or of the water through as halfold plants entirely from frost in ture, protecting plants entirely from frost in ture, protecting plants entirely from frost in mer. The application involves no difficulty. In the case of a garden frame, a sliding "water over the frame containing the plants; the only over the frame on difficulty.

In the case of a garden frame, a sliding "water over the frame containing the plants; the only difference from a glass light being that it holds over the frame is always placed in a flat position. The depth of water generally kept in the tank is about two inches in winter and summer, and ball the depth in spring and antumn.

To Know Fure Glands.—A solution of To Know Fure Glands.—A solution of

To Know Pure Gilling.—A solution of the coloride of copper will show the difference between gilding for which gold has been used the gilding with alloys of inferior metals. It is said gilding; is imitation gold, a brouch of the solution gives a black mark, copper separating solution gives a black mark, copper separating solutions gives a black mark, copper separating burne metal no discoloration cocure. The test call with a solution or or interts of silver, the first of which gives a brown aport, the answer gold goods of It start gold do not nitrate of silver, the first gold do not change their color with nitrate of silver, Lesf. gold is tested by being shaken up in a closed change at no alteration, while "heaft gold is tested by mills of silver, Lesf. shottle with any being shaken up in a closed bottle with any wills "while "heaft gold with a pottle with any being shaken up in a closed should be solved while "heaft" lesfer gold gold to bottle with any baing while "metal" lesves grow gradually black.

To QUENCH THEST.—A physician writes to a contemporary that ice-water does not demond a contemporary that ice-water does not quench thirst, but increases it. "I remember a little story," said he, ""which, I think, might do much good, if published during the hot water good, if published during the hot water that I heard from an old sailor. He said that is suppreceded companions lived for days on three pints of water, and were not a bit thirsty. When I saked him to water down, they each took a teaspoonful and water down, they each took a teaspoonful and gargled it well in their mouths. It say one wall quench his thirst as effected we are until that the experiment, no matter mouth with not over a tablesononful or water, he will duch the thirst the contently as a quart of water heatily swallowed, and will not that it of water heatily swallowed, and will not that the furth with were the well in the forth of the cash during the heated seeson are, if the dearth suring the heated seeson are, if the transfer were the cown, directly or the teach were known, directly or the theory of the wester."

MARING A PAIR OF SHOES IN LESS THAN ONE MACHING A PAIR OF SHOES IN LESS THAN ONE HOUR AND A HALF. ". "Yes," said the propriet for of one of the largest shoe manufactories in the oity of Portland, Me., "it doesn't take long to make a pair of ladies' shoes. Some time sgo a gentleman and his wife walked into our factory, and in just one house waring a pair of the forty, and in just one house waring a pair of the shoes which were made for the from the scook while shoes, which were made for the from the scook while set of machinery. These acts of machinery and passed through the lands of the different operatives at their manifes ever of machinery. The shoes shoes at their manifes of the different operatives at their manifes of the different operatives at their manifes (600 pair of shoes in a day, or one pair of shoes per minute, That is six pair of shoes per minute. That is six pair of shoes to a machinery."

ARTHOIAL QUINIER.—The British and Colonial Druggist has investigated Dr. Hewitt's olding a sar artificial quinine manufacturer, and claims as an artificial quinine manufacturer, and nes arrived at the following conculation: The act outcome of all the inquiries made is what ascens to be conclusive evidence that Hewitt is not making artificial quinine here or elsewhere; that he has never made any; and that he has rever made any; and that he has received considerable aums of money for the with which, having procketed the cash, he refuses to proceed. This supplies the motive, the amount of Hewitt in the earlier stages of his nucleit of Hewitt in the earlier stages of his career as a "discoverr." Bosn.—A New York scientist says that the earth's polar ice is penetrating the interior of reaches the furthere will be an explosion that will split the world into pieces too small for truck patches. A PLUMP ARM.—A meager, skinny arm is objectionshie, not only because it offends against all conditions of beauty—plump roundeness, softness, fresh color, smoothness, gradual sepering to the wrist—but because it is associated with the sepert of old age and disease; and, again, because it suggests man's kinship to the age. Sweeping is excellent exercise to program, again, because it suggests man's kinship to the aduce a plump arm. Three hours of housework if she wears thimbles on her furgers and sleeps with her bands in gloves lined with cold cream, with her bands in gloves lined with cold cream, violin playing has a tendency to make pretty plump, with a searcily observable depression over the joints. The fingers taper gently, and plump, with a searcily observable depression over the joints. The fingers taper gently, and over the joints. The fingers taper gently, and to make a soft, clear skin. Lemon removes to make a soft, clear skin. Lemon removes the little and the search of the stands in the wash as a soft, clear skin. Lemon removes the stains.—Christian at Work.

## GOOD MEALTH,

Cossel's Magazine is worthy of attention of the property of th

EAST.—For generations the main idea in the treatment of organic heart disease has been physical rest to diminish the labor of the dampaged organ. We have been in the habit of propitising all forms of active labor to the suffering that consider the principle of the principle of EXERCISE IN THE TREATMENT OF HEART DIS-

blood and frequently stop hemorrhage TO STOP BLEEDING OR THE NOSE.—A simple plan of stopping bleeding at the mose has lately been advised. Grasp finally the mose with the finger and thumb for 10 or 15 minutes; by thus completely stopping the movement of air through the mose (which displaces freshly formed clots) you will favor the clotsing of the blood and freedraly about a property and tree property and property an

A CURIOUS DISCOVERY.—A Ruesian physician, Dr. S. Th. Stein, reports some remarkable experiments, in which he has induced esteract from the yeas of young purpoises by subjecting the yeas of young purpoises by subjecting fork for 12 to 24 hours, or for a much less time, hearing. The cataract som disappeared on remarkable animals were deprived of the power of hearing. The cataract som disappeared on removing the exciting cause, and could be removing the exciting cause, and could be refacted of the proposer of the proving the exciting cause.

"TULED BREAD"—AN ENGLISH EDIRLE.—
Pulled bread is an edible that ought to be on every American table. It is designed to be esten which cheese, and it is designed to last of treshly made bread, and while it is still warm pull the inside out of it in pieces the warm pull the inside out of it in pieces the size of your hand or smaller. Put these into the oven and bake them a delicate brown.

When cool they are orisp and as full of flavor as a nut. Eat pulled bread once with your cheese and you will want it often.—London letter in Meston Heruid.

ORCHARDISTS' FORS.—In a paper on injurious insects, Prof. J. A. Lightner placed the total number of insect species in the world at \$20,.
000. Of those found in the United States, 7000 or 5000 are fruit peets, and at least 210 attack the apple.

SCIENTIFIC PROGRESS.

Progress in Metallurgy.

Horsellurgy is the oldest of the solences. It was born in the fallurgy is the oldest of the solences. It the solence of the solences of the solences. It was born in the efforts of the slow through the counties less obseged these come down of the season the season of t

It is within a comparatively short time only that the within a comparatively short time only that the waite of exhaust steam from an armony it is allowed to go to waste when, it is allowed to go to waste when, it were tallized as it might be, it would save been tally superceited, and in many places, it were the work of a great of a second of a mount of steam nearly for use in dy-houses, and withip proper strange.

It were tallized as it might be, it would seem of bigh pressure for many of the end of the works and the stranger for use of the stranger than a dy-houses, and within proper stranger for use of the stranger to many of the comewhat larger than they manned to manned the works and they carried out they cannot be consently be comewhat larger than they be comewhat larger than they be used. It many oases where larger than they be used to wrongly designed seven to manned they be seven to the seven of the seven of they be consently be comewhat larger the seven they be used to the seven they have a large extangly designed seven to they seem to they be seven to they seven to they be correctly to the control ston will be free; the designed seven to they consider the west as a sea where large pipes were changement must be properly carried out. The pressure are one shift to the ortenistic when the constitution will be free; the designed seven to the control ston will be free; the seven to the seven to the count of the ortenish the control seven to the count of the count o balls fall together, the throttle-valve or its equivalent is thrown wide open, and the engine equivalent is thrown wide open, and the evercome this difficulty the governor is sometimes so made that when it stops, and the balls are in their lowest position, the throttle valve is closed. In order to start the engine the throttle valve is disconnected from the governor. As soon as the engine has acquired its proper speed the conceptual or the content of t

Exhaust Steam,

hution of Power,

If it comes at all, will come from the more interest to the content of the comes at all, will come from the content of the con

The Probable Revolution,

The recent tendency of modern manufacturing in the recent tendency of modern manufacturing is easy fact that the construction to that the test that state that the fact that the tendence of the tendence the tendency to break. This concentration has a tendency to break up small manufacturing operations, and to concentration has a tendency to break up amail manufacturing operations, and to concentrate the tendence of the tendence of the tendence of the tendence.

A Probable Revolution in the Distri-

RECHAMISAL PROGRESSS.

BUTTER FUNGI.—Members of the Microscopical Society of Calcutta have found that Calcutta bave found that Calcutta butter always teems with microscopic organisms when made as is customary, and directly from fretch butter churned directly from fretch butter churned directly from fretch butter churned directly from fretch butter by the precious mostly too poor to yield butter by the precious boiled and put saids to 'set,' a samall piece of butter or a teaspoonful of butter milk being butter or a teaspoonful of butter semally being and churned until the butter seem to be introduced partly by the said churned until the butter as white water and partly by the eatle butter or butter and partly by the eatle butter or butter and partly by the eatle butter or butter in be introduced partly by the boiled mass is formed which is even to be introduced partly by the butter in the butter or butter in the introduced partly by the said butter or butter in the boiled milk. The butter or butter in the boiled waster and partly by the said butter or bu

THE BOTTOM OF THE SEA.—At a meeting of the Bociety of Telegraph Engineers and Electricism, coently held in Engiand, Mr. Edward Stalibraes read a paper on a deep-sea soundings trioisms, reconstly held in Engiand, Mr. Edward Stalibraes read a paper on a deep-sea soundings in connection with endmarine telegraphy. Mr. Stalibraes read a paper on a deep-sea sounding with a scalar paper of the connection with endmarine cable occarries and the stalibration of the connection with a decedy a distance of about 700 miles, The soundings were taken on one expedition, recorning the stalibration of the configuration of the configuration of the confiduration of the configuration of the configuration of the color of the configuration of the configurati

THE VELOCIPEDE MOTHING MEW.—The aim to provide a provide

What Causes Arrestant Pressure? What Causes and Dekots the artesian wells of 900 to 1050 test show pressures of 250 to 325 pounds. As there are no elevations within the geologists, grasologists, or seismologists the geologists, grasologists, or seismologists please tell us what causes the pressure? Is it ark Dimit of Visibility.—That and a large as bander of describility of the minutest object it is possible to see and selected the minutest. Six Hangy George bearing to find the microscope is a speculation of case the bology of some of the contract of the could make the could be seen of the seen of the could be seen of the seen of the could be seen of the 
Chermistry has a liberature of its own. This is structured for miles to correspond to this is structured to its own. This is structured to its own. This is structured as a liberature of its own. This is structured to its own. This is structured to of texture he field in the inspired he comparatively recent discovery, has adequate literature. Specially on the chemical adde, while the inspired have been almost wholly ignored. It will be a steephing-stone to the competent of the own wancement of the craft in the right direction.

The beautiful afford understand that he competent of the chemical the meaning that he inspired have been almost wholly ignored. It will afford understand that meaning the coloration in this direction. In these days of being more generally taken to scorn co-operation of their direction in this direction in this direction to graphed a competent of the coloration of their measures are destroyed by a competent of the coloration of the more coloration of their measures are not of the interest and the more of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by the interest of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of their measures are destroyed by a competent of the coloration of the colora derstand something, at least, of electrical engineering.

ALWAYS AVOID belting made from leather planes and something, at least, of electrical engineering.

The Bursting of ELX-Wheels Engineer ing of a fly-wheel is usually due, says Engineer er abould be pliable, of fine, close fiber, solid in to prevent undue acceleration of the engine.

The character of the great of a governor ing down of the gear by which the governor is grantially uniform thickness, and the lape diview. The considered, The belting should be of subfinitely acceleration of the engine.

The considered is a governor is the considered, and is stened and is a farting a constant of such cases to revolve, the provided and fastened. Motion At Real.—At the Royal Institution, London, M. Winshurst Excitung.

London, M. Winshurst has expidited an exposedingly interesting experiment in which small type placed on a disk revolving several shousand times a minute was distinctly seen and read while in motion. This was accomplished by manns of an electrical arrangement which caused exact instant only when the type was vertical arrangement which expenses to built minate the yrint at the exact instant only when the type was vertical. But for the buzzing produced by the great vertical to the disk, the words would have been supposed to be at rest. This beautiful application of the electricity spark gives a ready means to one of observing any and all changes which may of observing any and all changes which may take place in either matter or machinery in rapid motion.

METHOR OF CASTING ALUMINUM DISPACE OF THE OF ALUMINUM DISPACE OF SET OF CASTING ALUMINUM OF COVERED.—Dr. C. C. Carroll of Meadville, Pa., after years of experimenting, has discovered a set of which a discovered and the office of the carbon decay, and welded. It is claimed by metallurgites and artisane that this is a very valuable giets and artisane that this is a very valuable for many purposes on account of its extreme for many purposes on account of its extrementation, since it insertes the meanistic of the set of decay and one-oxidation by experimentally admirably ad

An Undirating Throng of Odor,—That odor is, like light and sound, a phenomenon of undulation is the belief of M. P. Leolerc. He urges that it is more resonable to suppose that the that it is more resonable to suppose that the that the more resonable cappene are due to the door odor of beta the rubbing carace may waves set up than that the rubbing caraces may be except as a smilted which cannot be detected except as a smilted which cannot odor of heated areantous acid is a smell accompanying chemical action the same as in many other cases of a crion the same as in many other cases of a crion the same as in many other cases of a crion the same as in many other cases of a crion the same as in many other cases of the claims to have produced interference of occurate the connection with it. Leoled the control of the connection with it.

HIGHEST AMERICAN PRAK.—". The highest mountain in America," must now be changed from Mount 81. Elias to Mount Wrangle, a little to Mount Wrangle, a little to Mount Wrangle, a little to the north, Several of these mountains the to the north, Several of these mountains "troughly" estimated at 15,000, then "olosely" at 16,000, and a meroud barometer made it 12,000, and a merourial barometer 11,255, Mount to 13,000, an arearoid barometer 11,255, Mount to 13,000, an arearoid barometer 11,255, Mount to 13,000, and a merourial barometer 11,555, Mount to 13,600, and a merourial barometer 11,555, Mount Wrangle, it 12, ries in turn 2000 feet shove Copper River, the north, it this holds true, Mount Wrangle, is at point, it this holds true, Mount Wrangle is at bear 1000 feet higher than any other peak in Morth American in turn 2000 feet above Copper River, Month Mangle, it at the merican sold strue, it is a within the United States boundary.

AVENTORS are beginning to look into the advantages of trade secrets for protection whenever they have a new thing to set on the marever they have a new thing to set on the marever they consider the little secret or rise.

When the clouds of conspiracy begin to rise,

Worthless inventions can be sent to the patent
Vorthless inventions can be sent to the patent
be carefully attended to, as they will do most
of the protecting themselves, for there is no
of the protecting themselves, for there is no
of the protecting themselves, for there is no
but let a good thing make its appearance and
there will be a dozen come forward with the
burd in the court when their testing has been beld
back for years for the want of a little money to
bug it a pueh. People for miles around are
give it a pueh. People for miles around are
bought in to offer their testimony, and so the
poor inventor is robbed of what a secuet in the
trade would have given him the greatest hold
to work from.

onemistry, this is a subject in which every one engaged in this great and growing industry should take an active interest.

Hove the transfer of Maybert is about state and we have been recumed on the Gouth Yuba river above Washington, has 5000 feet more altitude than that town, and its temperature is usually about the same. Here is Maybert is about state of the paye as wood bett we have no gravel mines, but we have as there is in the presence of which he has bave as good reline, but we have as there is in the discounty. The old Yuba, who we no gravel mines, and with earlies mine up the management looks well to the interest of its owners, management looks well to the interest of its owners, management looks well to the interest of its owners, with the Pelton wheels for all their works they are good returns to the stockbold-foot payer and the state of its owners, with the Pelton wheels for all their works they were annoyed with castely to wort mine and the stockbold-foot were allowed to make the work in the payer of water, whose it is seen to be considered to the stockbold-foot well with a payer pertor of water, where with the old wheel they were annoyed with castely of worter power is they are the payer of the work in the pelton wheels for all their works are stored to well and the stockbold-foot were annoyed with castely of water, whose is the work in the year of the work in the year of the with the old wheel the work in the payer of which were annoyed with castely of water, whose is the work in the year of which water whose is the work in the year of which were annoyed with searchy of work in the payer of which were annoyed with searchy of power and he work in the payer of the with the wide with the work in the

KEYNOT.—An arrangement has been made with parties to a suit involving the title to part of the Keynot mine by which work has been resumed on the mine. Mr. Lasky now has six men at work taking out ore. Sterra.

SCREUTY OF WATER, "Twanswick for some months, but the productive productively at the Brunswick for some metable."

SCARCITY OF WATER, "Twanswick", Diec. 33;
The late snowstorm in the mountains fell on dry ground, hence the melting of the deposit fails to furning the productive production of the deposit fails to furning the productive production of Lake Bowman shows in many places, which are lower than they have been before in years. The bottom of Lake Bowman shows in many places, and the bloomfeld Company have been obliged to discontinue working their claim by the elevator process till another storm comes. They have tempore oceas till another storm comes. They have tempore acceptable been obliged to discontinue working their claim by the elevator process till another storm comes. They have tempore cess till another storm comes. They have tempore acceptable been obliged to discontinue working their claim by the Devibec, Last through their dich in the week Pat Rey got teturn from a subpace of the week Pat Rey got teturn from a ship from another mine in the same locality and their ore near to ore recently made from the White Hill; from another mine in the same locality and their ore near another mine in the same locality and their ore of ore recently made from the White Hill; from another mine in the same locality and their ore or less ambiect one was estimated to be worth gate or or was estimated to be worth gate or or less ambiect mine in the same long their ore or less ambiect to legal proceedings, Mr. A. Davidson, who represents the parties in Mew York who are inner such a mine in the property, is now at Independence endenting the affairs in Mill and mines at Chropopolis and mines at Carony shape.

EYEVIOT,—An attangement base been made with such a work and independence endenting and the productive distribution work has been resumed on the with the production of the mine with the production of the produc

which the work of driftings and stopping on the verification. The mill was started up Saturday of all operation. The mill was started up Saturday of lat operate week, and from all reports very rich rock is because it is else of the ton. The mill was started up Saturday of last week, and from all reports very rich rock is because and pays on an average grot to the ton. Everybody persented the started up Saturday of last week, and from all veryers on an average grot to the ton. Everybody persented and pays on an average grot to the ton. Everybody persented and pays on an average grot to the ton. Everybody persented and pays on an average grot to the ton. Everybody persented and pays on an average grot to the ton. Everybody persented and pays on an average grot to the ton. Everybody persented and pays on an average grot to the ton. Everybody persented and pays on an average grot to the one made at the cast Grot below the addit where the connection was addit level, or as of seet from the entrace, and the water not being quick and handled escally with a star-inch pump, for milling there is now on the dump pay for milling there is now on the dump pay for milling there is now on the dump pay for milling and milling there is now on the dump upward of 100 tons. This is lower which the cast in the next two weeks, as the tramway leading from upward of 100 tons. This is lower which the cast in the next two weeks, as the tramway leading from the past work to be done now is the construction of the millip were which the cast and by steam, and a good stock of their spring the millip were which the sain millip work to be done now is the construction of the millip week which will be withing the cast or or the millip week which will be will will in a mythich for easy of the millip week. Tyranscherywork for consecret to the sain dumping on the cast of the present and a samps. For the present the millip week to the construction of the millip week the breathed to the took.

Screen of the Brunward week for come months, but the presen

rise in the market. WEWTON COPPER MINE,—The enhanced value of copper has had the effect of increasing the activity at a copper has had the effect of increasing the activity at a copper has had be effect of increasing the activity at a copper has had be ended in forms us that arrangements will be at once, made for rosating the arrangements will be at once, made for rosating the will be built over the pits to protect the burning hierarch on the dumps. To accomplish this, rough sheds will be built over the pits to protect the burning pites employed in attending to the operation. The ove many of the copperation of the market.

ABDBY6VI

MINES ON THE MACALLA KIDGES.—Cor. Cloville Bullues on THE MACALLA KIDGES.—Cor. Octowille Mines on THE MACALLA KIDGES.—Cor. Octowille Mines on THE MACALLA KIDGES.—Cor. Octoward Services, 15: The Gelevate form, according to the Macare of Teath, furnished please of Macare of Macare of Teath, furnished please of Macare of Ma

Amador.

Amador Jee. 24: Settlement of the matters in dispute between this combany and the creditors has been effected at last,
after a long siege of liftgation and subsequent negotistion. The terms of the compromise ste that
the old lindebredness is to be paid at 80 cents on the
dollar, and the new indebtedness in full; the entire
amount to be secured by a first mortgage upon the
seven per cent per annum
seven per cent per annum.

Niniye Bummary.

CALIFORNIA.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

Pany.

OMARA MINING WORKS.—Grass Valley Union,
Dec. 221. The new hoising and pumping works of
the Omaka and Lone Jeck Consolidation attented up
yesterday, and was made the occasion by many
yesterday, and was made the occasion by many
well-wishers of the enterprise being present to congranulate Superintendent Mainbast upon the auspicious event. The machinery is driven by waster, and
Pelton wheels are used for power, and everything
pumps will drain the mine in a few weeks, after
pumps will drain the mine in a few weeks, after
pumps will drain the mine in a few weeks, after
which the work of drifting and stoping on the vein
will be commenced.

THE GENERAL GRANT.—North San Juan Jisses,

to be only a small stringer, but very rich. Now it base the seperatence of widening out to a good-sixed base the specience, a few hundred feet farther down stream, Milton A. Baugh, one of the most persevering of good ore. A few hundred feet farther down stream, Milton A. Baugh, one of the most persevering of properties as new find that looked or a father down and near the junction of Canyon creek and the Cauth Yuba viver is the Washington creek and the South Yuba viver is the Washington maine and milling at their full capacity—so work so the good-paying mines of it bids state the pure state of the good-paying mines of it bids state of the properties which have made several starts and state of the properties which have made several starts and out died singer with the properties which have made several starts and outside inprovements. The work now will be stopwork so far hear all been what is called deadwork work so far hear all been what is called deadwork subgesting by the party that is going to work it. The base is the properties which has been so much preside the party that is going to work it. The base is the present time an unlimited amount of the most acceptable present time and reditors. It is good ore in sight, is yet standing tide on secount of the present time and the second of the present time and the second of the present time and the second of the properties of the management of the good of all independence of the management of the present ti

scarcity of water, only ten stamps are running. The mine, however, is being thoroughly developed, present mine, however, is being thoroughly developed, present search starting of the entire number of samps Seco, who took out as poolever of good cor two years are good for a huge distribute, the present set of believes, from independent of the control of the search starting search of the search of the control of the search of the sear

ALPHA,—The work of sinking the main shaft to the level with the Sutto tunnel is progressing well. BULLION.—Good progress is making in sinking the shaft from the 300 to the 500 level. Porpayry.

SCORPION.—On the 300 level the south drift is advanced a8 feet, and the north drift 39 feet in the advanced a8 feet, and the north drift 39 feet in the POTOSI.—The mill is doing good work and the ore is averaging well. A great deal of ore is opened and ready for mining,

OEST.—The lower levels of this mine are showing much right over levels of this mine are showing much righ of some new developments having lately much righ ore. HAYWOOD.—Much fine milling ore is being taken out from the several ore-producing sections. A good surke was made as few days ago in a drift too feet below the tunnel level.

YELLOW JACKET.—An average of 300 tons a day is being shipped to mills on the Carson river. This ore is being shipped to mills on the Carson river. This or is being shipped to mills on the describe the too levels.

BEST & BELCHER.—On the two level the east crosscut near the north line has been extended 46 etc.; total, safe feet, This crosscut continues in porphyly.

EXCHEQUER.—On the 122 level two crosscuts are being run just north of the line of the Alpha. The north drift on this level is fast nearing the south line of the Bullion.

Segregated Beligher.—The ore body that is soing explored by an upraise and crossout at a point to love well so fevel above the 1300 level continues to look well

GOULD & CURRY.—On the 425 level, from the pot the upraise in the east curoscout, a west drift is been advanced eight feet, and as south drift as a. This drift has been showing streaks of good

CROWN POINT.—The southwest drift on the Goo evel has not yet reached the point where it is ex-pected to cut the body of good ore found on the evel above. The crosscut on the 300 level has cut ow-grade ore.

UTAH.—On the 478 level the north drift from the and of west crossout No. 6 has been extended 36 leet, This drift has been extended 36 vein porphyry, clay and quarts. During the coming week will start an east crossout.

SIERRA NEVARA—On the S20 level the southwest drift than the main north drift has been advanced 45 feet and is now out a total distance of into feet. It still shows a mixture of clay and purity on the west side.

CHOLLAR,—Good headway is making in the prospecting drifts on the 650 level; also in the sinking and timbering of the incline. The usual amount at ore is being extracted, and all the ore-producing sections are looking well with much ore in sight.

SERRA MEMBA.—On the seo level the sufficient in the continuous and the sufficient in the continuous and the sufficient in the sections are looking well with the seo level the sufficient in the section and the sufficient in the section and the sufficient in the section and the sufficient in the sufficient

ALTA,—Ate extracting ore from the 785, 885 and 1150 [evels. The mill is crushing an average of 24 ons a day. There are in use four Frue concentrations as a day. There are in use four Frue concentrations is will be necessary to put them through a roasting turnace.

NEADA.

Weahold is Chievary.

Weahold is Chievary.

Weahold in the vein, and will extend it northwest to connect the vein in set a child northwest to connect in the vein, and will extend it northwest to connect stated a drift south on this level which is in fair ore.

Level above resumed work that the feet of the main would that the confidence of the main south of the base resumed work in the feet distant from the north drift. It is now 45 feet distant from the north drift expect to encounter the northward continuation of the the new extracting the continuation of the time. Are now extracting the standard of the ore body recently discovered on the 700 feet distant from the northward continuation of the time. Are now extracting the standard of the ore body recently discovered on the 700 feet of the ore body recently discovered on the 700 feet of the ore body recently discovered on the 700 feet in the ore of the analysis of the ore of the discovered on the 25,000.

HALE & Workenses,—On the Nexteen the ore development shows steady improvement since last report. Have taked werteally six steads to the ore development shows a feet of the ore of the quality. There should not shall associate the ore of seed the contract of the ore of the quality. The openings that the treek floor on this level [700), too feet fair special shall also. Have holsted 8/32 foors of ore and shipped 6/32 foors of ore of shipped 100 feet, and on the 1435 ore.

There is bullion on hand amounting to \$25,000.

There is being extracted at the standard or the 1435 ore. The major for the mile state that the ore of body quality is of prints in the ore of high grade is being obtained in the two works, and the mills for the sulfile on the 1435 or the state improvements at several points in the 1620 ore. The state of the mills should be safe of substitute of the state of the state of the state of the mills of the state of the state of substitute of the state of th

"ud promises to be extensive,

ow-grade ore,

district will be one of the best in Easten Wevada as Sprucomout District.

Sprucomout District.

Sprucomout District.

Sprucomout District.

Sprucomout District.

Sprucomout District.

Sprucomout District.

Sanother mining district of some prominence, is similared in the eastern portion of this county, and seastern portion of this county, and seastern portion of this county, and seastern portion of this county.

Sprucowered in the early part of 1890. After some preliminary prospecting, a Philadelphis company took hold of some of the most important mines and in 1872 erected one of the largest and most and in 1872 erected one of the largest and most and in 1872 erected one of the largest end most and in 1872 erected one of the largest start most and in 1872 erected one of the largest start most and in 1872 erected one of the present experience and experience ond experience of the teathern close down and stop operations, as the ore was of too order of the prospect valuable and the persent in sinking to greater depths and the order of the teathern of the ore and successful methods of the treatment of the ore and successful methods of the treatment of the ore and successful methods of the treatment of the ore and successful methods of the treatment of the ore and successful methods of the treatment of the ore and successful methods of the treatment of the ore and successful methods of the treatment of the ore and or the ore and the ore of the successful the ore and the ore of the close of the past summer and the turnece has made the prospect valuable and beyond close to make the ore of the treatment of the ore of ore, the ore of the past summer and the furner of the summer and the turner of the summer and the ore of the furner of the summer 
Outsy taking out ore, with their are now employed in and about the Grove.

A RICH STRIKE BY A BOX.—Viginis Enterprise, Dec. 20: Eddie Hearson, a boy 11 years of age, Dec. 30: Eddie Hearson, a boy 11 years of age, Bricklons mine, a few weeks ago made a very rich Barcelons mine, a few weeks ago made a very rich Barcelons mine, a few weeks ago made a very rich Barcelons mine, a few weeks ago made a very rich Barcelons mine, a few weeks ago made a very rich is from three to three sada heart less on three to the copper. In the second many of the same of the same date, and the same of the second second prometry of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is down near the line of the proposed south. This is one of the best in Eastern Nevada as son as a rush of the proposed south the proposed south of the south of the proposed south

GOOD ORE.—Esmersida Awcar, Dec. 31: D. Wiland & Sons have strucks a fine body of ore in the
lower tunnel of their mine which, it is estimated,
lower tunnel of their mine which, it is estimated,
will mill 85.5 per ton. Considerable improvemente
are being made about two miles west of Prine Grove
will mill 85.5 per ton. Also and a possible of the bring the decomposition of the ore of his mines that will average \$60 per ton,
in one of his mines that will average \$60 per ton,
in one of his mines that will average \$60 per ton,
the Grove. Mesers. Moses and Morgan have closed
in breeder mine for the winter. They have just
mished crushing shout, 400 tons of ore that will
mished crushing shout, 400 tons of ore that will
bush as nine-toot ledge of \$50 rook. Stronider and
son have lessed the ground from them and are now
son have lessed the ground from them and are now
busy taking out ore. Thirty men are now employed
in and about the Grove.

San Antonio District.

Pine Grove District.

Morthumberland District.

Good Ore. — Belmont Courier, Dec. 19: Son ery good ore is being extracted from the Granine, this county.

Were Janes and Berryman are freed for the faith.

MEW SHAPT.—Walket Lake Bulktin, Dec 21;
Wilkinson and Berryman are sinking a new shaft in the Siar mine. It is now as feet deep and they such shaften they such see the solution of the state three weeks, and last Saturds out ore for the last three weeks, and last Saturds out ore for the last three weeks, and last Saturds out ore for the last three weeks, and last Saturds to not as it comes out. The weather has been pretty rough in these mountains, but is milder at present rough in these mountains, but is milder at present and McCormick are at work on the Foxall mine, and McCormick are at work on the Foxall mine.

PAMLICO.—The run being made at the Kinkead mill on the Lapants rock promises to net as any orously. We are informed that several shipments of cover will be made shortly. It is runnored that the Evanting Star, one of the most promising mines in cover will be made shortly. It is runnored that the Evanting Star, one of the most promising mines in Syndicate has bught control of the property, and Evanting Star, one of the most promising mines in work on an extensive scale will commone soon.

Worthundershand Justific Morthumberland common of the property, and work on an extensive scale will commone soon.

# Gillis District.

THE CAMP.—Pioche Kasowa, Dec. 19; The week just past has revealed but little change in the confusion of mining or ordinary business events. Matters been about it the same in all respects and will probably remain so for awhile. In the meanine, probably remain so for awhile. In the meanine, other mining centers, the condition of Pioche is fully obtaining centers, the condition of Pioche is fully other mining centers, the condition of Pioche is fully begone for mining centers, the condition of Pioche is fully negative from such conditions of adventure, but they generally return and conclude to cast their fortunes erally return and conclude to cast their fortunes with those of Ely district, and we believe that ultimately they will be well rewarded for their faith, mately they will be well rewarded for their faith,

Ely District. Mill, Busy.—Belmont Coursey, Dec. 19: The Monitor Belmont mill was kept busy this week crushing the lores from this and Spanish Belt discretes, Some of the East Belmont chloriders are mortied belt discretes, Some of the East Belmont chloriders are mill.

Belmont District. SHIPMENT.—Walker Lake Bulletin, Dec, 21: A SHIPMENT.—Walker Lake Bulletin, Dec, 21: daily of the Durand abipment of 1 to tons of \$1000 or thou the Durand mine was made last Wednesday to San Francisco. A few specimens of \$3000 ore pave been sent to be sweet and the process of 
Aurora District.

# tons of good-quality ore. On the roo level have put in a ladder-way down to the lower tunnel and extracted 42 tons of fair-quality ore. Have shipped bullion valued at \$2763.95. OPHIR.—Good ore is being extracted from the winze down from the rapo level.

Reported by Dewey & Oo., Ploneer Patent:

List of U. S. Patents for Paoific Coast

PARK NOTES.—Reod, Dec 36: Everylhing is progressing finely at the Anchor drain tunnel, and the usual rapid headway is being made. Thursday John R. Chawson went over on to Bonanca Flat with a crew of men to do assessment and development of crew of men to do assessment and development a crew of men to do assessment and development a fine gold, and matters at the mine are in solip-shape for a profitable run this winter. The hoolsting shape for a profitable run this winter. The hoolsting in the Ontario shaft. No. 3, has been re-umed and will be continued until the stoo level is reached. At the stoo shaft, and a steam pump put in to thom has been re-umed and a steam pump put in to the made of the stood of the stood of the continued until the stood stood of the stood of stood thill. They are fixed for the winter's side of Scott Hill. They are fixed for the winter's side of Scott Hill. They are fixed for the winter's side of Scott Hill. They are fixed for the winter's work and expect to make a good showing on the claims.

per 100. The Latham mine is an inamense body of the should be considerably over seed to be mined at the exported process of a per 100. The Latham mine is an inamense body of the and to the can be used to be mined at the exported by the core to come into the capture of a country to the constitution. A large force of mee is employed in the country of exportations in early spring. I hazard nother mines in the district that pay considerably over some cooling that there will be lively times the country of exportation and taking the predicting that there will be lively times the coming the present winter with a view to recoming the view to recoming

new prospects opened up in the spring have been difficilly and the spring.

PLACERS.—Cœut d'Alene Kreovd, Dec. 20: It is not improbable that there will be four or the bed of or person or sprand or served or spring the property of the spring.

JOHAHO.

JOH

KINGSTON.—Shall, Dec. 18: We heat of a fine strike on the Migronne just below town. This is times a starke on the Migronne just below town. This is times, the Migronne just below town. This is time, with some of the best mining county in the time, with some of the best mining county in the Loc Carlo Wouv.—The Log Cabin is now down 15 feet, and in one all the way. They bave observed up a core-houses and two carloads teady to ship. Have ore-houses and down 15 feet, and in one all the May of the way. They bave observed up a new bast two carloads teady to ship. Have ore-houses and two carloads to the Horneri is all take with the state of the Horneri is all take with the state of the Horneri is all take Wasp, north of the Horneri, is showing up rich ore. They have opened up a new shall the control of the Horneri, is showing up rich ore, with the the Uncle Jack and Gen. Jackson maining and promeses as well as 'Is neighbor. We mentioned some time sign that associated Judge G. W. Feastly, late of Springfield, Mo., with him in the canner of the Uncle Jack and Gen. Jackson maining the thee Uncle Jack and Gen. Jackson mining the cincipate. These mines in the entire Southwest. We are only doing justice to the owners of the mines maned on the Uncle Jack and Gen. Jackson, by judy Judy Judy Mineral Mo., with the Uncle Jack and Gen. Jackson, by judy Judy Mineral Mo., will develop into rich mines in the total state that the Uncle Jack and Gen. Jackson, by judy Judy Mineral Mo., will develop into rich mines in the Uncle Jack and Gen. Jackson, by judy Judy Mineral Mineral Mineral Mo., will be well with the Uncle Jack and Gen. Jackson, by judy Judy Mineral Well Mineral Walling Just north, and adjoining frem. Items, Items, Mountain Christ, and the Minera' Dream, Mountain Christ, interest,

NEM WEXIOO

It, Worker Santa Clara Co.

F. B. Loake Santa Clara Co.

M. S. Frames-Alaudea Co.

G. W. Hoakels—Arizona.

M. Hirakson—Ban Josquin and Stanislau
A. F. Jewett—Tulate Co.

E. H. Scharkfylle—Volvade and Placet Co.'s.

Da. Stanker T. Perr, Berr, Go.'s.

We quote shipments since our lest, and shall be pleased to receive further reports:

Uccidental, Dec. 24, \$2763; Con. California and Virginia, \$73,720; Savage, 24, \$55,000; Hanauer, Virginia, \$73,720; Savage, 24, \$55,000; Hanauer, 22, \$65,000; Hanauer, 22, \$600,00; Hanauer, 22, \$600,00

Bullion Shipments.

The stock market has continued dull and inactive. Halle & Wortones and one or two others have shown some little advances, but otherwise there has been iltered for deveroes and one or two others have shown its of interest to record. The Virginis Embergh no says: The people are losing their sacceles through no says: The people are losing their sacceles through no deterroration in the value of the mines pleaselves, but simply because of their own greediness and the though they know that at the first decline of price, though they know that at the first decline of price, though they know that at the first decline of price, though they know that at the first decline of price, though they know that at his first decline of price, a rival broker to be slaughtered. The broker who honest advice in regard to this light margin business would win in the long run.

The big fash are barings a regalar holiday least of honest advice in regard to this light margin business at saccks at almost their own prices, and in less than two weeks lokey will be ready to again start everything booming.

In the mines all is looking well—better than when the highest prices we have had this winter were rulines the mines all a mines all an interest in the lower levels.

In the mines all is looking well—better than when the highest prices we have bad this winter were rulines. There is no trouble in the lower levels.

Mining Share Market.

REATED.—Jacksonville Times, Dec. 23: Anton Rose and Win. Crow have rented a portion of Gameron & Ennis mines in Galice creek district, and streek district, and streek district, and streek district, and con & Ennis mines in Galice creek district, and Cheek, who has some of the best placer mines in beginning to the case there is plenty of it. Work is properly a feedly and will operate long of the resing steadily and quies asiafactorily at Coulter & general greatils and construction of the way. The Wagner creek quarts are being crushed daily at the mill, with has suspended operations temporarily, but prospecting of the nines is still under way. This promises to be one of the best groups in the State, Messre Engaged in the development of the Wagner creek Engled and Brentano of Evanaville, Ind., who are Engaged in the development of the Wagner creek mines, paid this section a visit during the week. They seemed satisfied with the work which has been mines, paid this section a visit during the week. They seemed satisfied with the work which has been one gate of the best floors and may conclude to continue it on a sleger done, and may conclude to continue it on a sleger continue of the case of the best floor. It will require the expenditure scale than derelofore. It will require the expenditure of large sums of money before any returns are made.

OFEGON.

ORE AND BULLION SHIPMENTS.—During the past ten days the Greecent shipped 80,685 pounds of first-lease ore. Our the toph inst, 8 bars of Day bullion, 8588 fine ounces of silver, were shipped from the Mersec mill, and on Thursday the product was 6 silver bars, containing 7859 fine product was 6 silver bars, containing 7859 fine ounces. For the week just ended the Mackintosh once, 233,640 pounds of Dayy ore; lotal, 423,300 ore, 133,640 pounds of Dayly ore; lotal, 423,300 pounds. This morning the Ontario shipped 45 pars of bullion, 21,401.89 fine ounces of silver.

IMPROVING.—Silvey Bell, Dec. 17: One of the McMillen group of mines, the Hannibal, has lately above such states of improvement, conclusively proving that the grand mineral ledge on the original mines are located is decreased to be one of the foremost producers of silver when sufficiently opened. More light has been brought into the construction of the vein lately than for years past, and apparently with good results. MORK.—Prescolt Courter, Dec. soc. Now that copper is high and likely to get higher, miners are marked and likely to get higher, miners are miners and many others, whose equals do not we want to see a thousand or not we want to see a thousand or not we want to see a thousand or more miners taking our copper, not only in mines we have mentioned, but in Copper Basin and elsewhere. W. A. Osborne has about sold a copper where the will take a food look at the rich Howard poelect. We have a good look at the rich Howard poelect. He will take a good look at the rich Howard poelect. He will take a good look at the rich Howard poelect. He will take a good look at the rich Howard poelect. He will take a good look at the rich Howard poelect. He will take a good look at the rich Howard poelect. The will take a good look at the rich Howard poelect. The bear worked his indicates in the rich Howard poelect. The will take a good look at the rich Howard poelect. The will take the set of the thought of the Color of the the start who has purchased mines melt he color from Fred W. and A. P. Williams, will leave for the howard asid, abundah, and how devote his attention. Mr. Beringen of the Howard asid, abundah, out, the color of the this strengton of the Howard asid. But the same from Theo. W. Beiggs' great mine in Big but did not to good or. Beveral pack trains arrived at the same from Theo. W. Beiggs' great mine in Big he do from the office of the Boggs' great mine in Big but do from the color of the thousand dollars are the not of the thousand dollars are the not besonds. They will make the too Desonds. They will make the too Desonds. They will make the too Desonds. They will make the color to Desonds. They will make the too Desonds. They will make the color to Desonds. They are sold the standing the same to the sold the standing against a substantial signs of the seasons. The sold the standing and the standing the seaso

MEW CONCENTE, A'OR. — Georgetown Courser, Dec. 22: A trial on a large scale is to be made on or closinado central or a large scale is to be made on or diff. A. B. Granger. The invention of Mr. A. B. Granger. The control or of Mr. A. B. Granger. The property and property of concentral or concentr

DAKOTA.

CARBONATE.—Black Hills Pionest, Dec. 17: Jack Mal-sughlin, in from Carbonate yesterday, reports that he has a contract to do assessment work on the rests, that the state of the seesement work on the Helen Fraction, between the Wilkinson and Eustrees, that the state it down some 55 feet, and that the bottom is in very good silver-besting ore. The rests, that the state is a shalt on a one-foot calver-besting ore. The state of the central have given returns of \$354 the central the central the drift from the 90-foot level. Directors of Deadwood-Co. is working & force of men ore, in the drift from the 90-foot level. Directors of Deadwood-cited the passed this month, it is semi-officially stated that dividend for dedends will be resumed in a very few months, and it is month, it is explicated that dividend for one passed the summer that the temporary suspension is due to the fact that of the winter, recessitating an expenditure of \$90,-00 in payment therefor. Two bundred stamps are enough absend to insure their continuing so to do in a long time yet to come.

PHILLIPSEURG DISTRICT.—Buttle Inter-Mountain, Dec. 33: The Granite Mountain and the Hope companies are producing their regular amount of bull-panies are producing their regular amount of bull-panies are producing their regular amount of bull-better than ever before. In the east drift from the petter than ever before. In the east drift from the take bein made, taking in a distance of soo feet on the vein, and showing three and a half, ten and the stope west of the shaft, 150 feet of the vein is opened up, showing from three to three and a half opened up, showing from three to three and a half elect of ore, very rich in arsenical ruby silver and the etaily covered with large scales of native, The etaily covered with large scales of native, The

Baehr, H. and L. L. Garlson.

Dec. 28. Object, to carry on a general lithograph.

Dec. 28. Object, to carry on a general lithograph.

ing. printing, photo-engraving, sincogit-phineg, publing, publing, publing, publing, publing, publing, obo.

Capital cock \$50,000. Durectors: Richard A. Maec.

Capital cock \$50,000. Durectors: Richard A. Maec.

Cabe, G-orge W. Bills, franch Day, Edward

L. Labadus and Rubert Day.

A. O. U. W. HALL Association Dec. 28.

Dec. 20. Garidal stock \$550,000 in the Use of Confred Work
men. Carrial stock \$550,000 in 50,000 on Sherres.

Dec. 20. A. Barnes, W. J. Thomp
Edwin Danfor h. San M. Shortidge, W. J. Thomp
Edwin Danfor h. San M. Shortidge, W. J. Thomp
Barnes, M. B. M. Coury and Jacob Davis.

Comparison of the Marting Sherrer, W. B. Thomp
Edwin Danfor h. San M. Shortidge, W. J. Thomp
Edwin Danfor h. San M. Shortidge, W. J. Thomp
Edwin Danfor h. San M. Shortidge, W. J. Thomp
Edwin Danfor h. San M. Coury and Jacob Davis. Department 10, San Pirancisco:

CARLSON & CURRIES SILK VIANUEACTURING CO.

Dec. 83. Object, to buy, make, sell or deal in sewing embodiety, and twisted silks, spool couton and thread of all finds, silk goods, satins, ribbons and other like merchandis-, besides machinery and other thic merchandis-, besides machinery and other things useful or proper for the carrying to of a genthing a lark-manuf-cutning business, and also prients and prient rights. Capital s ock \$125,000. Directions in the present of the present

Persons receiving this paper marked are requested to examine its contents, ferms of subgreed to examine its contents, such transpared in the receiving the value more valuely as far as practicable, aid in oirculating the safer as practicable, aid in oirculating the course, and extending its influence in the cause it faithfully serves. Bubeription 1786, \$3 a year, Extra copies mailed for 10 cents, it ordered soon enough. It already a contest, placed soon enough.

Complimentary Samples.

The following companies have been incorporated, and papers fired in the tiffice of the Superior Court, Department to, San Francisco:

меж Іпсогрогатіопа,

SAFETY ATTACHMENT FOR EALTWAY-CAR.

SAFETY ATTACHMENT FOR TAILWAY-CAR.

STOVES....John Thion, S. F. No. 375,299.

Dated Dec. 20, 1887. A water-sapply tank is placed at one side above the above, and an annular tank surrounds the lower part of the stove. The two are connected by pipes. There are levers and controlling valves so arranged that in case of a capsist the croke are autother in case of a capsist the croke are autother in the two percents and water is discharged into the fire. The manner of security the doors and their movable top prevents them from and their movable top prevents them from their movable top prevents them from and their movable top prevents them from gaps from the stove.

Among the patents recently obtained through bewey & Co.'s Soienthio Press U. S. and Foreign Patent Agency, the following are vortey of special mention:

ORE-CRUSHIVE MILL.—A. E. Roe, S. F., assignor to Tatum & Dowen, Mo. 375, 199, agroot to Tatum & Dowen, Mo. 375, 199, cusher comprises an oscillating stamp-carrying block, driving stamp. There are some certacing the feed-board, and means for actualing the feed-board, and means for actualing the feed-board, and means to actualing the feed-board. The machine was illustrated in the feed-board, and means to some changes, the machine was illustrated in the feed-board, and means to selecting the feed-board. The machine was illustrated in the feed-board, and means to see Berry Planers.—John Greik, Sante Clara, Wo. 375, 153, Dated Dec. 20, 1887. There are some changes, planers for the world have been planers of the moving bed, and so shaped that as bed-planers, consists of guides attached upon as the ederacy, one state of the moving bed, and so shaped that will travel over these guides, thus raising and depressing the stave in such a manner as to give the proper curvature to the edges of the stave.

Santern Attachment for the calcument as the stave in such a manner as to give the proper curvature to the edges of the stave.

Among the patents recently obtained through

Notices of Recent Patents.

MOTE. To select a place a La Cole State a Cole Selection and the Cole Selection and the Cole Selection and the Cole Selection and Selection an

375, 04 - Koad Cart-M. J. Kalzner, Marroe, Marroe, 175, 04 - Koad Cart-M. J. Kalzner, Marroe, 375, 326, - Station Indicator — T. W. Muntoe, Brekley, Cal.

Berkley, Cal.

Berkley, Cal.

375, 326, - Station Indicator—T. W. Muntoe, 375, 326, - Station Indicator.

n the official report of U. S. Patents in Duwns & P.

MINING AND SCIENTIFIC PRESS.

## Iron and Machine Works.

## CALIFORNIA MACHINE WORS,

MW. H. BIRCH & CO.,
ENGINEERS AND MACHINISTS,
No. 119 Besle St., - San Francisco
Percentage of Prancisco
Percentage of Prancisco

Steam Engines, Flour Mill,
Dredging Machines
Dredging Machines
Rock Critebers

Brodie Rock Crushers, Medernic, Steem Power, Hydraulic, Steem Power, Hydraulic, Side Walk and Hand-Power

Manulacturers of B. E. Henrickson's Patent Automatic fety Catches for Elevators. All kinds of machinery acts and repaired.

## NNION IBON MOBKR'

ROOT, NEILSON & CO., SACHAMENTO, CAL.

Engines, Boilers, Steam

MACHINERY FOR MINING PURPOSES.

Front St., let. M & O Sts., Flouring Mills, Saw Mills and Quartz Mills Maci constructed, fitted up and repaired, Front St., ict. M & O Sts., Sacramento.

#### Golden State & Miners Iron Works.

Marufacture from Castings and Machinery of all Einds at Greetly Reduced Rates.

STEVEUSOU'S PATEUT

#### Golden State Pressure Blowers. Mold-Board AMALGAMATORS,

first St., between Howard & Folsom, Sts

NOSTMOHT SAMOH

#### ENGEKA FOUNDRY THOMPSON BROTHERS,

138 Beale St., between Mission and Howard, S.F.

MANUPACTURERS OF CASTINGS OF STERY DESCRIPTION

J. H. WILLIAMS.

MANUFRS OF GENERAL MACHINERY.

#### MINING ENGINEERS.

# W. A. GOODYEAR, Civil and Mining Engineer,

Address "Business Box A," office of this paper, San MINING EXLERT AND GEOLOGIST,

EOSS E BEOMNE'

NO. SOT SANSOME ST., SAN FRANCISCO. Mining and Hydraulic Engineer,

#### SAW COMPANY W. W. SPAULDING

SPAULDINGS manuacturers or

Inserted Tooth

CHISEL BIT

'SMES CIRCULAR

17 and 19 Fremont St., San Francisco. SAW MILLS AND MACHINERY

## N'S'KEILH'

Inventor and Manufacturer of

MOTORS, LAMPS Keith's Electric Dynamos,

Storage Batteries.

Electric Transmission of Power Electric Rallways, and Apparatus for the

Dynamos and Motors of all sizes for Conveying Power on Weterfalls for use in Mines and Mills, erected under arranty of performance.

SHIPPING AND COMMISSION MERCHANTS, JAHW∃N

809 and 311 Sansone Street, San Francisco, Cal.
Agents for drowers and Manufacturers. Charterers of Vessels for all Trades. Agents
for the Mexican Phosphate and Sulphur Company's Products.
Have correspondents in all the chief other of the United States, Europe, Australia, India, Ohine and the principal latends of the Facilic. Furchase goods and sell California products in those countries.

General Agents for the Pacific Coast of NATIONAL ASSURANCE CO., of Ireland; ATLAS ASSURANCE CO., of London; BOYLSTON INSURANCE CO., of London; BOYLSTON INSURANCE CO., of London;

BOTFING MIFF PACIFIC

UP TO 20,000 LBS, WEIGHT,

True to patiern and superior in atrength, toughness and durability to Cast or Wrought

CHINERY CASTINGS of Every Description. GEARINGS, SHOES, DIES, CAMS, TAPPETS, PISTON-HEADS, RAILROAD and MA-

SUPERIOR TO IRON FOR SOFT and DUCTILE,

#### LOCOMOTIVE AND MARINE FORGINGS.

ALSO Steel Rods, from \$ to 8 inced slaneseers and Flats from 1 to 8 inch. Angles, Tees, Chennels and other plangs Steel Wagon, Buggy, and Truck Three, Plow Steel; Machinery and Special Maps Steel to size and lengths STEEL HAILS from 12 to 45 pounds per yard. ALSO, Railroad and Merchant Iron, Middle per yard. ALSO, Railroad and Merchant Iron, Bridge and Machine Bollst, Les Steward, Nuts, Macheres, Shafts, Cranks, Prisons, Connecting Rods, etc. Car and Locomotive Axles and Frames, Brikes; Steambest Enails, Cranks, Prisons, Connecting Rods, etc. Car and Locomotive Axles and Frames, and Frames, Steambest Enails, Cranks Bridge and Machine Steam Steam Steam Street, Car and Locomotive Axles and Frames, and Frames, Cranks and Frames, Steambest Enails, Cranks Steam S

HIGHEST PRICE PAID FOR SCRAP IRON AND STEEL,

PACIFIC ROLLING MILL CO., 202 Market St., San Francisco.

HINOKLEY, SPIERS & HAYES, Proprietors.

[ESTABLISHED IN 1855.]

Sen Francisco

Office, 220 Fremont St.,

-MANUPACTURERS OF-

MARIUE ENGINES AND HOULERS.

Propeller Engines, either High Pressure or Compound
Stern or Side-wheel Engines.

MINING MACHINERY.—Holsting Engines and Works, Cages, Ore Buckets, Ore Cars, Pumping Engines and Pumps, Waster Buckets, Pump Columns, Air Com-

ргеввотв, Аіт Весеічетв, Аіт Рірев.

MILL MACHINERY.—Batteries for Dry or Wet Crushing, Amalgamating Pane, Settl-rs, Furnaces, Re-torts, Concentrators, Ore Feeders, Rock Breakers, Fur-naces for Reducing Ores, Water Jackets, etc.

Mill Machinery, Saw Will Ragines and Boilers, Dredging Machinery, Powder Mill Machinery, Water Wheels. MISCELLANEOUS MACHINERY.-Flour

Tustin's Pulverizer

WORKS ORE WET OR DRY.

DEANE STEAM PUMP.

**ENGINES**BOIL

OF ALL KINDS,

Either for use on Steamboats or for use on Land.

Water Pipe, Pump or Air Columns, Fish Tanks for Salmon Canneries

Boiler Repairs Promptly attended to and at very moderate rates. ON WARRY DESCRIPTION

Deane Steam Pump. AGENTS FOR THE PACIFIC COAST FOR THE

Orlies Engines and Tuetin Ore Pulverizers.

# Agents and Manufacturers of the Llewellyn Feed Water Purifier and Heater.

SLEVM ENGINES'

ARCHITECTURAL IRON WORK, SCAL, HIce and Refrigerating Machines, Shafting, Pulleys, etc.

SAVAGE, SON & CO., 135 to 143 Fremont St., San Francisco, GENERAL MACHINE WORK,

PERFECT PULL

First Premium Awarded at Mechanics' Fair, 1884.

Sole Li ensed Manutecturers of the

Medart Patent Wronght Rim Palley

Market St. Cable Railway U. S. Mavy, Pacific Coast S. S. Co. equ uo esn ur PREVENTIVE AND REMOVER

DOWNIE EUCALYPTUS

WOT Sale by all druggists,

JOHN W. GUICE, Proprietor.

San Francisco Pioneer Screen Works, Orders promptly attended to.

For Tiour and Rice Mills, Crain Separators, Revolving and Block Screens, Stemp Batteries and all kinds of Minning and Milling Machinery. Iron, Steel, Oopper, Brass, Ing and Milling Machinery Iron, Steel, Oopper, Brass, Inventor and Manufacturer of the celebrated Slot Out or burred and Shot Funched Screens.

Mining Screens a specialty, from No. I to I6 (fine).

PERFORATED SHEET METAL

No imitation, no deception, no planished or robies for consed. Only genuine stress iron in Quartz Sorceas Planished iron screens at nearly helf my former rates. I hate a large supply of Eattery Sorceans on hand suitable for the Huntington and all stamp Mills, which will sell at 20 per rent discount.

BATTERY SCREENS.

GREAT REDUCTION!

SAN FRANCISCO, OAL, 8 California St., and 21 Fremont St.

PARKE & LACY

та сатизавлявя

INCERSOLL ROCK DRILL CO.

For Catalogues, Estimates, Etc. address:

THIRD EDITION NOW READY.

SENT FREE ON APPLICATION

Section 16x16 feet; Length 36 miles.

AND FULL DESCRIPTION OF THE

Engineers' Tables of Progress

TUNNELING, SHAFT-SINKING, ETC.

and others interested in ENCINEEBS' CONTRACTORS,

MINING MEN'

NOTICE TO

WITH MAPS, ILLUSTRATIONS

JEHOH O

SEM PTERROISCO, USL

Standard Oil Company, Cal, Sugar Refinery, Etc.

BOILER

HORSE LINIMENT H.H.H.

21 & 223 First St.,

DOMNIE B. I. P. CO.

SEND FOR CATALOGUES. SAN FRANCISCO. SOT MARKET ST.,

California Inventors pewer con

San Francisco, Cal., Factory, 11 Stevenson St. San Francisco, Cal, Omce, 40 Nevada Block,

EBBI DI HAY

KOV ZB IBB 2

AIGUNAS W

SHAFTING, HANGERS AND APPURTENANCES

Nos. 129 & 121 Fremont Street,

## Metallurgy and Ores.

## SMELTING and LEAD CO. SELBY

416 Montgomery St., San Francisco.

And Assay Office, **COLD AND SILVER REFINERY** 

Highest Prices Paid for Gold, Silver and Highest Lead Ores and Sulphurets.

BLUESTONE,
LEAD PIPE,
SHEET LEAD,

SHOT, Etc., Etc.

Standard Shot-Gun Cartridges,

JOHN TAYLOR & CO. Under Chamberlin Patent.

AND MILL SUPPLIES, ASSAYERS' MATERIALS, MINE

GIZLE, GIVERNYEE VAD SAADERES' EL CHEMICYI' VALVENYEE VAD SAADERES' EL

114-118 Fine Street, - San Francisc We would call the attention of Assayers, Chemie Mining Companies, Milling Companies, Frospectors, ab bies, Societies, etc., including, also, a full stock Chemicals.

pplication.

(#G 'our Gold and Silver Tables, showing the value per many four Gold and Silver Tables, showing the value below to the computation of seasys in grains and dynamics and this well-known manufacturer are thoroughly lightly and this well-known manufacturer are thoroughly also for the stables of the well-known manufacturer are thoroughly shown at this well-known manufacturer are thoroughly also for the stables and the well-known manufacturer are thoroughly shown to the control of the con

## Nevada Metallurgical Works.

NO. 28 STEVENSON STREET,

А. Гловильнот, Маракет.
Отев worked by any Process,

Ores Sampled

Ores Sampued.
Assaying in all its Branches.
Analyses of Ores, Minerals, Waters, sto.
Working Tests (practical) Made.
Plans and Specifications furnished for the
most suitable Process for Working Ores.
Special Apple and Apple of Specification and Special S

Special attention paid to Examinations

Mines; Plans and Reports furnished, O. A. LUCKHARDT & CO., (Formorly Huhn & Luckhardt, ) Mining Engineers and Mecallurgists.

METALLURGICAL WORKS,

SIS Pine St. (Breement, corner of Leidesdorff Street, corner of Le

Assaylug and Analysis of Ores, Minerals and Watere.
Mines Examined and Reported on.
Practical Instruction given Treating Ores by in
roved processes.

Mining Engineers and Metallurgiets.

PELTON'S WATER WHEEL,



HIS WAS ONE OF THE FOUR WHEELS TESTED A by the left of 
This paper is printed with Ink Manufactured by Oberles Breu Johnson & Co., 500 South 10th St., Philadelphia. Brend Shall Ges-47 Ross St., May York, and 40 La Salle St., Ohicego. Agent for the Pacific Cosst.

QUARTZ MILL, Hantington Centrifugal

SEND FOR CATALOGUE

JIGS and TROMMELS. COBNISH BOLLS,

FRASER & CHALMERS

This Mill as a Crusher and Pul-vericer is without rival, Is in operation in lead-

ENCINEZ AND BOICEBZ'

'Sawna

WACHINERY,

CORNIZH

**ENCINE2** 

**BUMPING** 

allim bas

SEND FOR CATALOGUE AND TESTINOSIALS.

STURTEVANT MILL.

MACHINERY for SYSTEMATIC MILLING, SMELTING, and CONCENTRATION of ORES

HOISTING

HALLIDIE'S

MIKE ROPE

ENCINEZ'

DENVER OFFICE:
No. 248 Elghteenth Street, Denver, Colorado. TRAMWAYS,

UTAH OFFICE-SALT LAKE OITY, UTAH. MEXIOO OFFICE:
No. 11 Calle de Justez, Ohlhushus, Mexico.

NEW YORK OFFICE:
ROOM 48, No. 2 Wall Street. GENERAL OFFICE AND WORES: Freets, Chicago, III.

Mining Turbine Water Wheel. JAMES LEFFEL'S

These Wheels are designed for all purposes where limited quantities of water and high backs are utilized, and he generated to get more power with less webr than any other wheel made, Being placed on horizontal shaft, the power is transmitted direct to shafting by holes, dispensing with gearing.

Estimates furnished on application for wheels specially built and adapted in capacity to suit any particular case.

Enther information can be obtained of this form of construction, as well as the aring the construction, as well as the collaborated form of the construction, and the construction of the construction as well as the polynog to the manufacturers.

JAMES LEFFEL & CO.,

Springfield, Ohio, or 110 Liberty St., New York

S58 Market St., N. E. cor. Front (up stairs), San Francisco Experiments: machinery and all kinds of metal, tip., Experiments:

L. PETERSON, MODEL MAKER,

Mines Examined, Reports and Fstimates Furnished

ISBAEL W. KNOX,

FRASER & CHALMERS, General Agents,

Chicago, Ill., and Denver, Col.

PARKE & LACY, General Agents, San Francisco, Cal.

THE GIANT POWDER COMPANY

The Safest and Strongest High Explosives in the Market.

GIVAL POWDER OF DYNAMITE,

10DSON POWDER IMPROVED.

& \$1.5 Coach. FOR KAILKOADS AND LAND CRIEARING. Is from three to four times stronger than ordinary Blast-ing Powder, and is need by all the failroads and Gravel Cleime, as it breasts more succedy, all the fails setter and saves time and money. It is as dry as the ordinary Blasting Powder and runs as freely. \$1 25 Free

BANDMANN, NIFLSEN & CO.,

GENERAL AGENTS, 9AN FRANCISCO OAL

MINCHESTER HOUSE

At Third Street, San Francisco, Cal.

Third Street, San Francisco, Cal.

This Freeproof Brief Fullding is centrally located, it is the catty, only a held block from the Grand and Pelace Hotels, and close to all Steamboat and Endirona Office.

Mines, Minnes, Manhing Machinery & Supplies.

Mines, Minnes, Machiner of Pelace Hotels, and close to all Steamboat and Endirona Office.

Landday Hares of the Francisco Cal.

Mines Examined, Reports and Festmates Furnished.

Laundry Free for the use of Families HOT AND COLD BATHS FREE.

Terms, Board and Room, \$1.00 per Day INVENTORS, TAKE NOTICE

And upward. ROOMS WITH OR WITHOUT BOARD.

# 'HOMAS PRICE'S ASSAY OFFICE

CHEMICAL LABORATORY,

BULLION ROOMS and ORE FLOORS,

524 Sacramento Street, San Francisco, Cal.

SPECIAL ATTENTION PAID TO CONCENTRATION OF ORES. WORKING TESTS OF ORES BY ALL PROCESSES. COIN RETURNS ON ALL BULLION DEPOSITS IN 24 HOURS.

of in the Open Market to the Highest Bidder. Ores Received on Consignment, Sampled, Assayed, and Disposed ds sent by mail or express.

Maker of the famous Miners' Shoe.

Boot and Shoe Maker.

So Fourth St., Pioneer Building

JOHN T. SULLIVAN,

STEAM PUMPS, STEAM ENCINES, and all kinds of MACHINERY.

**WACHINE MORKS** 

EVANS

110 & 112 Heale Street,

& WM. MONTGOMERY, Prop're.

American Exchange Hotel,

San Francisco, m Bank of Cal.

Shorthand, Penmanship, Typewitking, Book-keeping





## ELECTRIC DEVELOPMENT COMPANY.

## Incandescent & Arc Electric Lights.

Electric Motors, Dynamos, Tramests, Elevators, Signals and all kinds of Electrical Systems for lighting and samisaton of power, either direct or with storage Batteries,

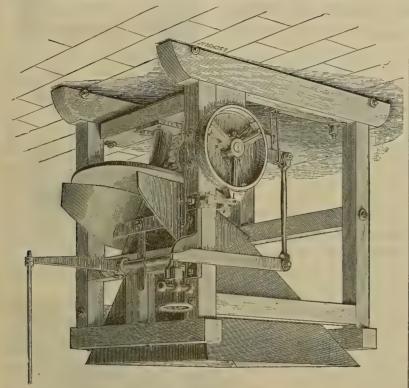
For Mines, Hoisting Works, Mills, Reduction Works,

EDISON INCANDESCENT LIGHT,

Offices and Showrooms, 323 PINE ST., SAN FRANCISCO.

## 10SHOV HENDY MACHINE WORKS,

Nos. 39 to 51 FREMONT STREET, SAN FRANCISCO, CAL.



The best form of Feeder ever devised, and pronounced by reputable mining men to be far "HENDY" IMPROVED "ORALLENGE" ORE FEEDER.

 Y. Crocker, Supt. Bunker Hill Gold Min.
 D. G. Wickham, Taylor Mine, Greenwood, Cal.
 J. R. Trechoan, Sapt. South Spring Hill Gold Mine Go., Cal.
 W. G. Robertz, Greenwood, El Dorado Co., Cal. superior to any form of "Roller" Feeder manufactured. We refer to the fing gentlemen who have furnished us with testimonial letters to the asper at our office, viz.:

WE ARE MANUFACTURERS OF THE

CHALLENGE," "STANFORD," "TULLOCK," & "ROLLER" FEEDERS,

And will furnish descriptive Catalogues and quote prices upon application.

#### SAN FRANCISCO SAVINGS UNION

California Inventors pewereco

#### DIRECTORY. MINING SHYREHOLDERS.

YSSESSMENTS.

	.SE	EE MONLE	IN THE	-WITE					
01 nsb	Annuah	St. St.	uostuo <i>i</i> a 82	£	qseN	L snozin	A	Silver King M Co	
g nst	lsuauA	35 Yuz	8 . M 288		Нетгшапп:	o		Mountain M C	
	lsuanA		.408 Califor		eniggiH A	VevadaO	1	Iowa M Co	
01 ngt	Special				T Stone			Generaee M Co	
SI Ast	lanaak	32 saic			R Grayson			Bulletin M Co	
St ast	Lenaa A	16ty St	so Montgon	₽	VaH L.	TsäzskA		Alaska M & M Co	
DATF.	MEETING	IN S. E.	OFFICE	٠.٧	SECRETAR	MOITA.	r. Poc	NAME OF COMPANY	
MEELINGS TO BE HELD.									
Montgomery St	608309	3 A H F.sh	IlFeb	13. Jan	25 Dec	6 sbe		Utah Con M Co	
32 SignofileO 6		33 M Buffing	astgi		VOV03	86 . s.b.s		Union Con M Co	
Montgomery St		30 E L Parker	11.B.C [[		25 Dec	(8sbs		Sierra Mevada M Co	
Montgomery St		38C E elliote.	пяс		VOV03	62,ba	γ9N	Potosi M Co	
Montgomery St		8A K Durbr	16B.		25Dec	fgbs.	vəM.	Occidental M Co	
Montgomery St		16 H Deas	24 Feb		50 Dec	"с "врв		Nevada Queen M Co	
Grass Valley		7.,T J Mitche	as 60s		VOV10	.02sia		Morgan M Co Morth Baoner Con M	
Montgomery St		21. CS Neal	nst It	26Ag		"šI, "sim			
A yarsa Kearny S.		4. O Herrman	n.6t 31		VOV. LO	OZBior		Mayhower M Co Mountain M Co	
Montgomery St.		oiziroM U81	ngt ES		VOVI., GE			Manhattan M Co	
te said Tie		3i.,J Crockett.	deaat		1.01Dec	simi		Live Oak Drift M Co.	
Monigomery St.		6 C K Sturte	d-M 81		TO. Nov	6 sbay	ravi	Kossuta M Co	
de California St		arggin a OII	de'a£%	EE 12		8Iaba	10 kT	IOWR M CO	
Montgomery St		30 M L OLVE	10Dec	4Dec		2 од в		Heath M Co	
Montgomery St		IS. T Wetzel	nsc 22	17 Dec		4 Giar		Gray Eagle At Co	
Phelan Block		4. W.J. Gleaso	net		39CL., 00.01			Gorgen Lieece G M C	
M. ntgomery St		annon a T. e	TYan		VOVIUS	т. т.		Fisher M Co	
Montgomery St		9.TFHoling		11. Dec	40 N US	[&nos	iro	Felice M Co	
19 California St.		30., J Stadfeld		99(T., G		i sbs		Found Treasure M Co	
Montgomery St		31. C E Elliote	ERL 01	5Jan	50Dec	\$2 sbs	79M	Chollar M Co	
16 BRITOTHEO PT		SE. J C. HAISE.	HECIZ	TY, L'BC	T.LU., INOY	6 BIUT	Co, Califo	Central California Oil	

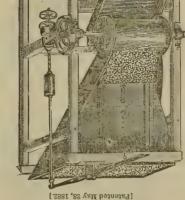
٠	жибц	forM Mont	2 contourna	me2 te pole2	ari sofe2	Highnort	бие тавито.	I to alde
Ξ								
	VOVI		38	eni4 016	Жәд М	Tu. signofile		Standard Con M
	1498.	44pp		smosnas 028	E Berier	T sinrolifa		San Francisco C
GI	ylut	25		328 Montgomery		L gnoxitA		Silver King M O
	dqa2			visionigomery		LsigrofilsU		Russel Reductio
	rqA.,	70		vismontanoM 826	Letts Oliver			Paradise Valley
	Dec	52		306 Pine		I Mevada E		Eureka Con M (
	VBM	10		522 Montgomery		T giutolila!		Dechee Blue Gra
OI	59U .,	20		vismontanoM 905	епэчен W			Con California &
MC	TAXASI	T TENDO	N. E. AM	ORRIGE IN	RECKELVEX.	OCVEION' S	KEVKE, T	INVES OR COL

## THURSDAY Dec. 29, 1887 | 525 Hale & Nor

15	tesfact. wolfeV	056	00 I asirg basti) 60	u
	Utah	093	189.4 4.651	
£.4.3	Union Con	DIZ	50 Exchequer1.10	7
ogg.,	Scorpion	OST	ogg Oudley	8
7. P	Sierra Mevada	04	10 Confidence, 9,001	
o35	Silver Hill	09	908 Стоскет	
7	Save?	USI	70 Crown Point 7.004	
204.	Peer7999	OL	60 Con Va & Cal 234	7
34 . I.	Peerless	300	00.6 asllodO 62	ğΙ
g	Potosi	120	30 Challenge S.15	
og6*.	Occidental	OIT	00 Bodie Con 2,70 50 Belle Isle 30 Challenge 30 Challenge 30 Challenge 30 Challenge 30 Chollar 3,25 Chollar 3	ĭ
1.7.	Отегтивп	00T	UV Bodie Con 2.70	Ť
	Ophir		50 Bullion 1.50	7
og8* '	Navajo	000	00 Bulwer80c	76
2.2	Мет. Queen	T00	oge eromitiaa 00	ĒΙ
4	N. Belle Is	300	90 Belcher	ī !
:9'T'	M ono M	COL	50 B. & Belcher64	T I
8. F.	Lady Wash	007	03.I sadqiA 00	I I
OF.	Lady Wash	OGI	LI.IsebnA 00	ťΙ
008*	Justice,	007	32.L 1.25	6 I

#### Don't Fail to Write,

## THE ROLLER ORE FEEDER



#### Golden State and Miners' Iron Works.

#### Ores, Mining, and Commission, HORACE D. RANLETT,

420 Montgomery St., S. F.

UNION COPPER MINE, Calaverse Co NEWTON COPPER MINE, Amedor Co

ist attention given to management and saies of and purchase and shipment of copper produce.

COARTZ MINES FOR SALE.

# NYME OR

2.9	09 1 96 9	5,4	10 8	26 9	129	Z,	45[[04
							noiqmst
2.2	3,00 2,00	68.2		06.2	3,00	06.2	из пепветина
30	281 212	503	523	222	243	22	on. Va. & Cal
7	07, 66,		06.		06*	88.	
7	· · · ·	****	****				orie Tunnel
	3.00	***		• • • •	9°8		οπέοπ
3.10	3.2 2.25	06.2	02.5	09°7	09'Z	2,45	····· uon etpo
ъ.	UF. 103.		02.	69.	08.	09.	elle Isla
io T	26, 02.I	1.00		1,00		00.I	stermore
38. I	2,301,30	97. I		62.2		97. 2	······uoinin
	79 00'8	05.7			8.75	75	est at Belcher
9.50	15.00.0	Y / . 2		00.0	74.0		rophy
1.50	91'S, TT	00.7	Ser.	94'6	\$0T	OT	elcher
I.	34.30	00.2	02.		CZ.	08.	rgenta
	91.1 88.1	35.1		09.1		09.1	
1.20							
I,56	2,55 1,25	33, I		2,10		2,20	
18,5	2,101,25	09 T	05. S	00.2	ar e	06'1	shql

	***							• •
скег	gg*	06.	98"	UI'T	68.	30.I	CL.	-
	09.6	SOT	ž.G	FOT		103	09 9	٠,
r. Pacific		07		****	.:7.	100	95.0	14
	04.	cr.	65	cī.	09"	09*	čč.	
Imperial	04	ET. 8	10	62.8		08,5	26	
		OL	FOT		99.6	F.T		
	D							8
dTallo	2€	29	62.8	30 8	53	62.25	09 F	9
	06,2	3,00	06.2	3.10		3,00	00.2	2.
1. Va. & Cal	22	847	222	527	503	912	183	7
	68.	06*		06.	:-7.	č6.		
lannuT sii							Y	
ποίτ		9.65				3.60		
	2,45	09.2		02.8	00.4		62,2	٠.
							20 0	3.
e[s] al	09.		69	02		03,		
	00.I		1,00	01 T		1.20		Ţ
Znoil	97. 2	01,2	62.2	06.2	67.1	08.2	08,1	٠.

	07, [38,1		J. 4.	1.40	06.I	gg, I	atice
	09*		c9'	09.	69,	69.	
•			GP.		09.		
•		• • • •			****		dependence
•	00.1						
	09.8 88	00.8	TOT	0918	57.7	67.6	le & Morcross
F	00'1 00 9	04.4	100.7	00.6	72.9	67.8	uld & Curry
Ī	01.1 35.1	1.20	1.25	0111	1.00		Brize bas
Ī	00.1 01.1		09°T	GP 1		SP.1	rpedner
	****		62.8		92 9		TERKS COB
			,;	• • • • •	****		B & B
	62.		08.	.20	00°	66.	rgjså
							mtrallerda
	67, 50, I	68.	OT'T	68.	06.	68,	оскег
,	107 9 20	R.J.	FOT	2G	SOT	9.50	оwn Роль
	Y	.:7.	****		07.	****	m. Facine

08,	07. 66.	28.	I 50	96,	30.I	1,00	corpion
		****			05. A		ilver King
SF.	66, 09,	OF. (		091	07.	09"	ilver Hill
4.25	38.8 00.8	0F F	74	29	6,25	87.8	ierra Mevada
					0-		eg. Belcher
.24	89 88	00.7	62.6	00.8	58	187	97886
							Sheridan
							mabinad2
07,	03, 07,	č9.		<b>6</b> 8.			
991T	1,701.20	97 T			09°T	SF'I	
67.8	06.4 59	00,3			7.50	62.8	verman
06,1	01.101.8	56.1			02.5		phirtidg
16	\$4 :20L	0016		FIL		10g	ecidental
1,25	00, lab r	01.13	94.1	0Z L	2,00	08.I	Torth G. & U attol
0010	0015 00 5	00.4	oria	0117	07.2	0000	Tev. Queen
2,35	2 80 2,25	09.2 (	UP E	04.6	4.20	3,30	BI+BBIY
87	62,7 00,8	06.7	Ŧo.	8 #	ug.B	00.8	
			T OO	00.1	UT T	1.07	
06	ZS. 00,I	06.	20 L	1.00	OTT	ro. r	
00.6							It. Diablo
00.6	GI.E 09.8	06'F	0011	0019	80	01.0	nsoixel
00.I	2,201.50	07.5					
00.2	03 1 00 0	93.0	09.6	90.0	01.0	60, g	Stid W nitte.
GF.	68, 109,	38.	02.	09.	07.	cc.	Wash W able.
**	20	- 10	0Z * Z		00.2	77	····· spansaes
gg.	07. 88.1		P. I		08.1	CC. I	ustice,,,,,,,
38.	09.	***	cg'	09.	99.	89.	ullagilu
			CP.	09.	ng.	**	
					77.0		**************************************

#### San Francisco Metal Market.

	(0)	98		٠.	٠.		•	٠.	٠,	٠.	٠.	۰	• •	• •	• •	• •			• • •	• •					REI"	
	(0)	90	Ŧ	• •	• •	•	• •	• •		• •	•	• •	• •	• •	• •	• •	•••	٠.	• • •		. 4	161	¥ '!	8 <b>%</b> 1	18.8	H
ı	@20	_	-	• •	٠٠		•	٠	• •	٠.	٠.	•	• •	٠.,	HE.	BB	91	ÇP	25	3-	-H	ΛE	II	82	ICI	nθ
	(0)	15		٠.	• •	•		٠,	٠.	• •	* '	• •	• •	•	• •	• •	• •			٠.	• • •	TY	эu	ĮŲ:	Inc	N.
	(a)	46		6.4			•	• •	• •			• •	• •	**	* *	• •		• •	• • •		• •	• • •	• •	. W	lor	I
	(i)	Ý6		9.0		9.5				• •	* *	B	θZ	IB.	å.	181	αŢ	D.X	o۴	pr	ιοτ	II.R.	D	Ŋ;	ggg	E
ı	Ø)	9T			• •				•	• •	• •	۰	• •	٠.		• •			1P	° u	[91]	[និប	H-	-7	EEI	LLE
	(0)	02	8		٠.				0.6			0	9.4		9.4				* 1		* *	go	'p	Je	!! प	0
	(a)	00	7	* *		2.0						9.0	• •			٠.	• •	• •							on	
	(a)	08	ř	-2	BO	1 8	9. 1	d	0.1	Œ			8	pg	n	nα	U	3 9	ζO.	13	un	00	Bik	) 'q	०प	8
	9	8	•	• •			ň	4.4		7		• •	**	4.0	20	4 1		·ŕ			• •		•••	,JE	peq	S
		09	0					٠.			• •		* *				* 4						• •		TE	
1	G (9)	00	0101					1.9	• •			r o		* *		9.4	• •					• • 2	ы	_	CV	37
	Ĩ Ď	00	īg	**	8.0	•	4	• •		• •	4.5			* *	• •	* *		• • •	•	**	ī,	ON	1	641	poq	8
	õ	ng	22				e e	6.3	• •	* *		a þ	9.2			* *		• •	9:	ĮΨ	M	91	I'B'	I	[]rZ	0
ı	(233	00	TZ	4.6			•					1.0	•						• • •	αo	4"	giq	U	Ož	X.e.	0
۱	(435	_			•		•				۰	• •	7.	91	σο	g '	E	0	Ń	143	06	π	CB	LIC	m	₹
۱	87.0	_		* *	0.4			* *		* *		0.0		• •			* *	•	-		πo	2 1	uο	ąπ	ηØ;	H
١	Œ20			• •	* *			• •	* *	* *	•	0.3	• •	5 0	• • •	**1	αo	4 2	HOP	DΠ	TR.	និយ	FJE.	)-	-NO	EEC
1	(0)	cz			9		• =				* 1		• •	• •	• •		b ==			140	9प्	8	U,	a:	JIE,	Æ
	ă	16		* 1		۰		• •		* *		• •	* *		• •	* *	• • •							.40	ngc	1
	(a)	-		* *					7.5		***	•	• •	٠.	• >	* =	•••	• •	* *			- 21	ņ		394	
1	(A)	93		9.5	2.0		2.91					• •		* *			•	• •					* *		oft	
	0	00																							da	
	0	9	-	4 1		•	• •	• •	* *	• • •			* *			* *	• •	• •							U.I.	
	(i)	29	-	0.5			• •									01	iii.	11	BIL.	10;	H t				RA	

#### DIAIDEND NOTICE.

#### The German Savings and Loan Society.

## GREGORY

San Francisco, Cal,

Cor. Fremont and Mission Sts.,

# YABNIHOAM

SOLE AGENTS FOR



STURTEVANT BLOWERS AND SURIN BAND SAW BLADES. AEBBER CEMTRIFUGAL PUMPS BUYKES INDROVED STEAM BICKEORD, S SOMER DRIFTS' BEMEUT & SOU'S MACHINISTS CHIMICLS, LOOFS' MEM HVAEN NVAAL, CO', SMV-MYCHINERA' MOODMORKING MACHINERY, WOODWORKING

HOLLOWAY FIRE EXTINGUISH-BRADLEY CUSHIOUED HANNERS, MASSEY'S STEAM HANNERS, MAS LURBINE WATER WHEELS, BRYINVED MITTING MYCHINES SHIMER MATCHER HEADS,

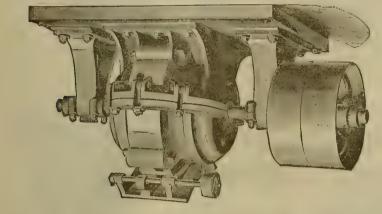
YACHT ENGINES,

# ENCINES and

EROM 2 TO 100 H. P., ALWAYS IN STOCK

ULLS. SUPPLIES AND LUBRICATING שורר

# CENTRIFUGAL ROLLER MILL EFISBEE-LUCOP MILL,



most rapidly and economically. Mineral Substances to any required degree of fineness For Reducing Ores, Quartz, Phosphate and Cement Rock, and other

All substances when ground leave the will in a finished state—no regrinding being necessary. Automatic bed. Wearing parts of Steel and Forged Iron.

#### BLAST AND SCREEN MILLS,

erepairs differs	Capacity, 24-inch mill, 1 to 2 tons quartz per bour, to 60 mesh; 3 tons cement or phosphate of omesh. Wearing parts acquire no difting, easily and cheaply replaced when necessary Cose with circumstances. Less than 1c user ton for phosphate and cement rock. Maximum, 10c, not
20 inch. \$800 ths. \$800 ths. \$6 to 9 H P \$6 \times \frac{3}{4} \times \frac{4}{4} \times \frac{6}{4} \ti	Sizes   Siz

#### EHISBEE-FICOL WIFT COME, A

HOOKER & LAWRENCE, General Agents, NEW YORK.

And 461 Howard St., San Francisco, where a Mill can be seen in operation and ore Will be reduced at reasonable rates.

DOORFE "ECONOMIC" STAMP MILL



We have here the Stamp Mill in a cheap and simple form. The high drop of the old stamp is more than compensated for by the great weight (1200 fbs. each) of our stamps, and the repidity (300 extokes each per minute) with which they run. There are 4500 strokes of the shoes on the dise per minute. Less power is required than in that there are 4500 strokes of the snees mount of work.

The Morter has screene at both ends, giving ample discharge. There are no cams or tappets to wear or be adjusted. The stamps adjust themselves as the shoes wear.

AUTOMATIC ORE FEEDER

ROCK Breaker, Goes with each Mill. We also have a suitable

Several Mills are now in the mines doing excellent work. The "Economic" is not only a mill for small mines, but we believe it is destined to suversede the old stamp in mills of the language capacity.

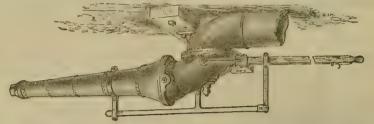
MUTAT & BOWEN,

34 and 36 FREMOUT STREET, SAW FRANCIS Manufacturers of Mining and Sawmill Machinery, Eugines, Boilers, Etc. SAN FRANCISCO, CAL

MACHINE. JIJUARUYH IMPROVED

HOSKIN & CO., Marysville, Cal. I DIFFERS FROM THE OLD STYLE IN HAVING ONLY ONE JOINT instead of two. It is of greater expacitly and more easily worked and

HYDRAULIC **0**E FORM



it illustrates the IMPROVED FORM OF DOUBLE-JOINTED HYDRAULIC severate through the condition of the decision of Sawyer, Judge of the U.S. Circuit Court, in the Figher was, It. Hossite et size.

oulic Mining Machinery turnished upon application.

Set to 51 Fremont St., Sen Francisco, Cal.

No. 40 California Street, San Francisco, CALIFORNIA VIGORIT POWDER CO.

NILEO GILLO GELINE

("DYNAMITE" or "GIANT")

Vigorit "LOW" Powder, Blasting Powders.

FOR REMOVING STUMPS AND TREES,

WORKS: California City, Marin Co., Cal. ED. G. LUKENS, Manager.

SAN FRANCISCO, CAL.

OVER 1400 ARE NOW IN USE. Concentrations are clean from the first working. The wear and are merely nominal. A machine can be seen in working order and ready to make tests at 220 Fremont (\$275,00) F. O. B.

FIVE HUNDRED AND SEVENTY-FIVE DOLLARS

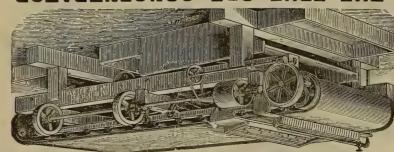
THE MONTANA COMPANY (Limited), Lowdow, October 8, 1885.

DRRE SIRE: "Having tested three of your Frue Vanners in a competitive trial with other similar machines umph), we have satisfied ourselves of the superiority of your Vanners, as is evidenced by the fact of our baving ered twenty more of your machines for immediate delivery. Yours fruly,

THE MONTANA COMPANY (Limited), eved twenty machines for immediate delivery. The MONTANA COMPANY (Limited).

Profeeted by patents May 4, 1869; December 22, 1874; September 2, 1879; April 27, 1880; March 22, 1891; February 20, 1885; September 15, 1883. Patents applied for. N. B.—Since the above was written the 20 Vanners having been started gave such satisfaction that 44 addi

ADAMS & CARTER, Agents Frue Vanning Machine Co.,



VAUNING MACHINE. OE OBE THE FRUE CONCENTRATOR

# FIVE HUNDRED AND FIFTY DOLLARS

Room 7, No. 109 California Street, . .

The present improved form of the celebrated "Triumfie" Ore Concentrator possesses many advantages over any other style of Vanners, Vanning Machines, or Concentrators, yet introduced to the notice of mining men. These advantages consist in the superior features which enter into their construction, and facilitate their operation.

They are constructed in the best manner; their trames being of fron, insures their solidity, durability, and perfect quire in constructed in the best manner; their trames being of fron, insures their solidity, durability, and perfect quire less freight space in boxes, by which their cost of transportation is reduced, and occupy less mill room when set up.

An important improvement has recently been introduced into their construction, which consists of a litrer of transportation is reduced, and occupy less mill room when set up, placed in front of and which takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal motion which is imparted to this takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal motion which is imparted to their take one their construction, which takes the discharge from the feed and amalgam bowl. The improvement is in the reciprocal motion which is imparted to the first from the feed and amalgam bowl. The improvement is in the respire is at the cash of the United States, bearing evidence of the efficiency and superiority of this form of Concentrator, and we shall be pleased to send Oirculars covering such letters of testimony, and, as well, directions for setting up and operating these of so send Oirculars covering such letters of restimony, and, as well, directions for setting up and operating these to send Oirculars of or quote special prices for any considerable order.

"TRIUMPH" ORE CONCENTRATOR. THE HATE

San Francisco. 10SHOA HENDY MACHINE WORKS,

Nos. 39 to 51 Fremont St.,



For Saving Gold in QUARTZ, GRAVEL and PLACER MINING, Silver-Plated Amalgamating Plates

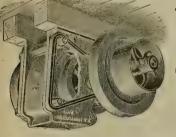
At reduced rates. Get our prices. Three thousand orders filled. Tifteen mediate warded.

SAN FRAUCISCO GOLD, SILVER and Mission Sts.

purchased of JOHN TAYLOR & OU., cor. First and Mission Sts.

These plates can also be parted by the structure of the property of the property of the structure of the peak.

MOTICE.—Mining men are cautioned against fraud in purchasing poor mining plates made in this city; they have proved detective in the Silver-plating, and in heaving much less Silver than was contracted for. When in doubt make an assay; thin, light Silver-plating looks the same as heavy. E. G. DEUNISTON, Proprietor.



MANUFACTURER OF HUNTINGTON,

Mining Machinery of Every Description, CONCENTRATORS AND ORE CRUSHERS,

Roller

steam Engines and Shingle Machines,

SEAD FOR CIRCULAR.

No. 45 FREMONT STREET,



## **LOB WINES** ENCINES

OKE CECSHER

Motion or Pat. Improved Friction. 1, 2, or 4 Drums, with Reversible Link

LIDGERWOOD M'F'G COMPANY,

PARKE, LACY & CO. PACIFIC COAST AGENTS, 96 Liberty St., New York.

## THE RUSSELL PROCESS COMP'Y.

MEM LOEK OLLICE' IS BEOVDWAY C. A. STETEFELDT, President.

A pecialty. Bound, alor paper is printed with ink Manufactor of the State of the St

# HOISTING

SAN FRANCISCO, CAL.

**OUARTZ SCREENS** 

and Salivation. Entirely Prevents Lead Poisoning

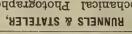
The most perfect appliance for people engaged in Smelting, Dry Crushing, Gnano Works, Quitestiller, Dry Crushing, Threshing, Lead Corv oding, Threshing and Stock driving, and all other compactions for which there is a stock driving, and all other compactions of the result of the re

LIFE-SAVING RESPIRATOR

San Francisco Cordage Factory.

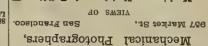
Established 1856.

TUBBS & CO. Constantly on hand a full assortment of Manila Rope, sea Rope, Tarred Menila Kope, Hay Kope, Tarred Menila made to order on short notice Extra sizes and lengths made to order on short notice



Machinery, Models and Buildings

611 and 613 Front St., San Francisco.



A SPECIALITY.

WINING

PORTLAND, OREGON.

SAN FRANCISCO, OAL,

SALT LAKE CITY, UTAH,



Machinery



NOS. 21 and 23 FREMONT ST., and 8 CALIFORNIA ST., SAN FRANCISCO, CAL.

ENGINES and BOILERS. Machinery, Steam Pumps, Wood and Iron Working

SEND LOH CHODIVERS

## BOILER. NOTJEZA

A NEW AND RADICAL DEPARTURE IN

PAR CENT GUARANTEED OVER ANY OTHER STYLE OF BOILER. A SAVING IN FUEL OF AT LEAST 25 DESTINED TO REVOLUTIONIZE ALL FORMER METHODS.

Spring Valley Water Works, S. F. 1 200 H. P. Selby Smelting Works, Vallejo

California Cotton Mills, East Oak

Lamony Borax Mining Company,

Alameda

Spring Valley Water Works, Vallejo

California Cotton Mills, East Oak

Barnony Borax Mining Company,

Alameda

Spring Works, Vallejo

Los Angeles Blectric R. R. Co., Mexico... 1 100 H. P.

San Jose & Santiago Blectric R. R. Co., 1 100 H. P.

San Jose & Santiago Blectric R. R. Co., 1 100 H. P.

Santiago Blectric R. R. Co., Mexico... 3 75 H. P.

Jose Morks, Vallejo

Santiago Blectric R. R. Co., Mexico... 3 75 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 3 75 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose & Santiago Blectric R. R. Co., Mexico... 1 100 H. P.

Jose The following parties have these Boilers in use or under construction on this Coast, to whom reference is made:

EOR CIECUL

bred to mil grades of one and control of the construction work and construction with the construction were constructed to the construction were constructed and construction was a constructed to the construction will be constructed as a construction will be con

Chicago: "New York:

MACHINERY,

BRAYTON & CO.

HEINE SAFETY

#### L. R. MEAD, Secretary. R. S. MOORE, Superintendent, WM. H. TAYLOR, President,

PACIFIC IRON WORKS,

Location of Works, S. E. Cor. Beale and Howard Sts., San Francisco.

Has the Following Advantages:

SAFETY,

DORABILITY,

San Francisco, Cal.

AND FACILITY OF INSPECTION and REPAIRS. ECONOMA'

Boilers can be seen working in San Francisco at Palace Hotel, Spring Valley Water Works Huester Bros. & Co., California Jute Mills, and other places. . өзи пі wоп төмоЧ өзгоН 000,00

Guaranteed More Efficient than any other Boller made.

REFRIGERATING MACHINERY for Steamships, Brewerles, and Cellars. SULLDERS OF

WILSON'S PATENT GAS-PRODUCER.

STEAM HOLLERS of all descriptions.

SUGAR MACHINERY—Sesenthiells, Marine English, Seren Propellers, Centrifugal Fumps, Seren Capesans, Cargo Winches, otc.

Fumps, Steam Capesans, Cargo Winches, otc.

Thining Company, 60-stamp Mill for the Alacka Mill and Mining Company; 60-stamp Mill for Quartz Mountain Mining Company.

QUARTZ MILLS—Gold and Silver, Copper and Lead Smelting Works, Roasting Furnaces Mail kinds.

AIR COMPRESSORS—Rope Power Transmission.

HYDRAULIC PUMFING Cand Goisfurg Machinery.

WROUGHT-IRON WATER PIPE a Specialty. Morr.—Have just completed order for 35 miles of 44-inch pape of 4-inch iron to spring Maily Maily Water (Works Company, San Francisco.

SARW-MILL MACHILIERY Palley Water (Works Company, San Francisco.

SARW-MILL MACHILIERY Of all tinds.

SARW-MILL MACHILIERY OF A mill tinds.

SARW-MILL MACHINERY OF A mil

**MATER TUBE** 

Manufacturers and Sole Agents for the Pacific Coast for

MACHETH PATENT STEEL-RIM PULLEYS-Fifty per cont lighter and 26 per cent cheaper than cast-fron mulleys; will not break in transportation.

**BOILER**,

MOTIOE.—All our plates are guaranteed to have the full weight of silver agreed upon, and are tested becomplaints about light weight, made so often before we started in this branch of industry.

## JUSTINIAN CAIRE, Agent,

521 & 523 Market St., San Francisco,

Assayers' and Mining Material.

Agent for HOSKINS' BATTERY SCREEUS AND WIKE CLOTH

HYDRO-CARBON ASSAY FURNACES

MADE OF BEST SOFT LAKE SUPERIOR COPPER IN QUARTZ, GRAVEL, OR PLACER MINES. NOTICE TO GOLD MINERS!

GET OUR PRICES BEFORE ORDERING ELSEWHERE, SAMPLES FULL WEIGHT OF SILVER AND BEST QUALITY OF WORK GUARANTEED.

SAN FRANCISCO NOVELTY AND PLATING WORKS

No. 108 FIRST STREET.

CAR CHIPPED MHEETS

IRON CASTINGS of all descriptions.

STEIGER & KERR,

OCCIDENTAL FOUNDRY, 137 First St., San Francisco, Cal. CHAS, R. STEIGER,

FOR SALE.

I New 12-inch, 35 H. P. Engine.
I New 12-inch, 35 H. P. Engine.

130 Sansone St. room 12.

BACK TRIES OF THE STEP VILLE OF THE ST. ROOM 12.

BACK TRIES OF THE STEP VILLE  For the volumes St. Incompany S

DSS INIAIRST STITECT,
Opposite Second St., San Francisco, Cal
Careful analysis, qualitative and quantitative, made of
ores, metals, solis, waters, toods, maderines, industrial
products, poisons, etc., Correspondence solicited,

Analytical & Consulting Chemist,

W. T. WENZELL,

AND RAILROAD CASTINGS.

MEDAL AWARDED, MECHANICS' FAIR.

281	orn I Schellen Tilten R. R. Car	14. V. Cart, Road, M. J. Ka zneridő hul. Z. Kar. H. H. J. Kar. H. H. J. Kar. H. H. J. Kar. H. J. Ka	'U' 'FC '86 'BOLCGE' 38' 94' 'U'	101 Petroleum Industry Petroleum Exbanston Petroleum Exbanston 119 Petroleum Gandla 119 Petroleum Gandla 119 Petroleum Gandla	35 Kitchen Floors 12 Kitchen Tables 12 Labor D mand	analiang Uperelges, "La Ballone, Inger- Togol Gold
21OO telaw exected stack (qual) 22OO telaw exected to telaw exected stack (qual) 22OO telaw exected stack (qual) 23OO telaw exected stack (qual) 24OO telaw exected stack (qual) 25OO telaw exected stack (qual) 26OO telaw exected stack (qual) 26OO telaw exected stack (qual) 27OO telaw exected stack (qual) 28OO telaw exected stack (qual) 28OO telaw exected stack (qual) 29OO telaw exected stack (qual) 20OO tela		(41) (18. Azie, J. Pekhugar. 19) (18. Azie, J. Pekhugar. 18. (18. Carlouping, S. Byine, S.	kiigaiskeii.gaiskii.egi. 324 yorkupa, ag listi' 625 yorkupa, ag tanii 128 yorkupa y	Peak and Its Uses  184 Fendulum Observations.  56 Petroleum Candle.  71 Petroleum Candle.  71 Petroleum Expanetion.  71 Petroleum Expanetion.  71 Petroleum Eusline.	Kerosene Lam a 63 *Kery Monument. 55 Knife Blades *Kimberley Mine.	66, 67, 196. *Donner Lake
36	Dranns 220 man 10g	68 J. H. Oulver 268 Lift Cane, Walking, O. H. Lift Cane, Walking, M. Hill. 425 M.	164 Swimmers T	266 263 263 263 263 264 265 265 265 265 265 265 265 265 265 265	To Joinery Friction	- loomitation of the out
TT 'C 'T TO TION TO TO TO TO TO TO TO TO TO	ob, W. F. Cartrell. 268 Hurlburt	166 Cable R. R. Grip, H. R. 10 135 Taylor, 349 Lat	28 Stee b Gars 29, St. Steep t 6 St.	35 Park City Motes	iron and Washington Ter	Dam Construction4
2 Co. O. du'd lisoub d'oning 1882.  Anticolin de la contra del contra de la contra del contra de la contra del contra de la contra de la contra de la contra de la contra de l	M. Sold Material S. C. Sterry, A. Schreid Wolding M. Berleg B. C. H. Culv T. H. Culv T. H. Culv T. C. Sterry M. Sterry M. S. Sterry M. M. H. M. M. H. S. Sterry M. M. H. M. M. H. S. Sterry M. M. H. M. M. H. M. M. H. M.	38 Rischmuller W. Grip. G. W. Males	eagueff Tallate 221	334 Paper in Arks 152 Paper Pia ts 178 Paper Pia ts 178 Paper Pia ts 252 Paper Pia ts	98 fron Melting 18 fron in Oregon 77 fron Pripe 173 fron in San Bentardino, 18, 18, 180 fron in San Bentardino, 18, 18, 180 fron in Oregon fron Tor. 187 fron in Washington Tor. 188 fron in Washington Tor. Inspectors of Mines	Salsased degraph Copyright Decision of Octroston of Meeks Corresponding Correspon
• One Representation of the state of the sta	iswell 364 Slate-Pencil Sharpo	199   But on-Hole Gutter, C   1715    190   Dickin on   190     204   Entrou-Hole Gage, D   116    182   Philips   190   190     182   Badism   281   Ingel Day     183   Badism   281   Ingel Day     185   Badism   281   Ingel Day     185   Badism   185   Inge	Steel, Am riean	Grone. A factor of the factor	Ti Tocendiary Birds. Indians' Kights. St Industrial Proportions. St Treat-st Worm. St Iven-Earing Worm. St Iven-Carling Tocklong.	Copper, Hydro-metallurgy, Opper, Hydro-metallurgy, Opper in Nevada
173 Mational Indicator Co 150 H. O Hoff. M. Yada City & Grass Valy B. Hoff. M. Co., 92	Bler B B Pevton 268 Blast Extraching (	193 First Package, F. M. T. 189 Hyd. 199 Byd. 19	34 Steam Power	Oregon Reduction Works,	V Ide Lenses. V Idaho. 164, V Illustrafted L mdon News. 44 Illustrafted L mdon News. 44 Illustrafted L mdon News.	*Contagion Carriers# Contagion Carriers# Constamptives, Hope Jur Constitution
Observe, 200 [Kirgman M. Co	Total in Concentration 10181 (19900) si taraba	SIL State and Ender On the Horace West Court of the State	81 Steam, ExpansionSteam, High Pressure	Ore Deposits	Mydraulic Engine,	i adt do sagriM obstofol)
008oD noisastels sage #4 . 4. 48. 38. 38. 38. 38. 38. 38. 38. 39. 31. 40. 40. 31. 40. 40. 40. 40. 40. 40. 40. 40. 40. 40	Virtues, C. H. French. 300.  1 Serial French. 300.  1 Serial French. 300.  2 Serial French. 300.  2 Serial French. 300.  2 Serial French. 300.  3 Serial French.	10   10   10   10   10   10   10   10	Agg South Fore Milles 134 Southern Cel. 158 States Milnos 179 Stable One Session. 179 Stable One Office. 179 Stable One Office. 179 Stable One Office.	Oil from Gra e Seeds	# Hotolog of To-day # Hotolog Apparatus, Mur- rays The Hotologia Treatment of Hydrophobia Treatment of Hydrophobia Treatment of	Coal Products of U. S. Coal Products  Coal Tar Products  Coal age  Coal age  Coal age  Coal Archio.
nater 316 Euphrat Elect io R. R. Co., 396 128, District of Concentration of Co., 310 Bendug, 12 Litzy Eagle M. Co., 316 Gray B. Harboy Maill Co., 316 A Build Creat Roundlie W. Wester	Tow Attachment, C. Scraper, C. B. Hun	See Ren Hill Filebox I W Hard	39 South American Mines	PARTITION OF THE STATE OF A PROPERTY OF A PR	Health Rems, 28, 38, 15, 71, 1, 185, 1 185,	Goal, Advance in 4 Coal in California U. Ooul Combustion Coal Use Coal Las
26. O. M. edge, page 38. O. M. O. M. or M. O. M. or M.	ad Weeder, H. W. Mc.—172 ad Weeder, H. W. Mc.—172 ad Weeder, H. W. Mc.—172 ad Weeder, H. W. Mc.—173 ad Weeder, H. W. Mc.—173 ad Weeder, H. W. Mc.—174 ad W. W. Mc.—174 ad Weeder, H. W. W. Mc.—174 ad Weeder, H. W. W. Mc.—174 ad Weeder, H. W.	286 State of the control of the cont	Smoke, Loss by   135, 185, 185, 185, 185, 185, 185, 185, 18	" Night Work in Shops	Harbors, Matural and Arti- Barbors, Matural and Arti- ficial Health in Cal fornia Health, D. ngera 10	Ohlorination Process. 243, 28 Giroular Saws. 3 Claybon Air Compressors. 3 Climate Selling. 1 Climate Selling. 2
\$38 OO M torsupnoo STI	man man 256, E. W. Williams. 256 St. Down Sp. Proledow, De Romory, De Romory, Berry De Romory, De Romory, Dr. Sp. Sp. Sp. Sp. Sp. Sp. Sp. Sp. Sp. Sp	69 Blast Gover or for Grain Gra	119 Smell, Sense of.  119 Smell, Sense of.  111 Smell, Sense of.  Smeky Loss by 35, 185, 28, 38, 185, 185, 185, 185, 185, 185, 185, 18	Wew Almaden Mines, 34, 1898. Well Merican Mines, 34, 1898. Well Mines.	We desired the Mine State Stat	Chimneys, breadying C. X. Control of Chimneys, breadying Chines Chineses Progress C. S. Chemical Progress (S. 008, S. Chinese Chinarien Chimnes Chinarien Ch
Be Burn- Coleame Valley Oil Co252	as Preserving Jar, M.	252. Bevel and Square, Shaw, 1880. 351 44 80 1981 44 80 1981. St. St. St. St. St. St. St. St. St. St	Sale	130 Navues Devices Nevada Notes Nevada Line, Mines on Nevada Mines Nevada Line, Mines	COLUMN STRUMBE STRUMP PROPERTO	o formeron
so. Barr, 93 Anfelop. V. Hey Land and Water Co	Store Lid, W. H. Rubber Dam Clar	Seem Connection, Sims & Case Wasser 124 Gass	Jelver Motes, san Eureka, 2	smoordsuff 628	A Gold Co nage  (Gold, Discovery of  P Gold, Discovery of  P Gold Best Silver Supply  (Gold and Silver Supply  (Gold and Silver Supply  (Cold and Suppl	Canifornia, Mines
SEL a' SA IIBH .W. U .O A PEI	l'achine, A. C. Swain, 172 schine, A. C. Swain, 172 schine, A. C. Swain, 172	257 Br ing Press, W. F. Den. C. 124 wall	87 *Sierra Mojada Dist. , 49, 3	346 Monterey Gold Mines. 3.000 Mines. 3.000 Mines. 3.000 Minest. 3.000 M	Geological Momenclather 90 Geological Theories	ILL' IBL' 508'
C. 8, 236 INCORPORATIONS	Artificial, J. I. Irving 418 Tritator, C. S. Bonn 220 Transce (*) Rell mar Switch, Drake Transce Wall, E.	102 Arack Design, Obas, Ha. 61 Fue. 124	369 Charlespeare and Escon, 9 370 403. 119 Sheep Mt. Country 162 Shoes Mt H-alth	Missionary Ridge	Geographical Momenclat-	Bultons from Blood
353 Wive-K pe Machine, A. S. Hallide Wachine.  123, W. T. P. Chen 425  423, W. T. P. Chen 425	"Tumoer Chards, E. L. Seller Tumo, P. Mesick (argon in the controllegal Tumo, Cathering and in the controllegal Seller Se	M 2/1 delibration of the control	337 Settling the State 110 Settlier, Clayton v. Mac- 244 kie 124 Shafting Under Floors 1 132 Shafta Co. 210, 2	mining orowin	Galena Di trict Galena Di trict S. Gasa Kilna S. Gasa Wells On Gasa, Rolov of Casa, Wells S. Gasa Gardeld Will	90 20340
St. Frame Ohapman Stop to , J. G. 189 [ygard 44] Wick Adjuster, G. Hard 45]	e Lacape, U. Ransen 124 ding Hed, B. F. Rairar, 61 ding Hed, B. F. Rairar, 61 p. p. c. a c. Masher, me for Reading and	752 625	98 Seafoam District	Mining Benefits Mankind.	Farmace, Cole Farmace, Iron, 309, 377, 37, 100, 415, 410, 415, 410, 415, 410, 415, 410, 410, 410, 410, 410, 410, 410, 410	Bracing Stass *Brick Kilns
Trice   L. M. Windmill, G. He derson, 30	hypenicr — 284 Pilow Cleral, M. P. Pilow Cleral, M. P. Pilow Cleralerd, L. A. P. Pilow Stendard, L. Parker Crease Experience of the Compiner, J. P. M. Compiner, J. P. M. C. Stendard, J. Wolley, J. P. M. C. Stendard, J. W. C. Stendard, J. M. Stendard, J. M. C.	198 Air Brake, W. W. Hans- (22) Air Brake, W. W. Hans- (22) Com. 172, 181 to (22) Air Brake, A. B. Murray, 280, Fel- (23) Air Brake, A. B. Murray, 280, Fel- (24) Air Brake, A. B. Murray, 280, Fel- (24) Air Brake, A. B. Murray, 280, Fel- (25) Air Brake, A. B. Murray, 280, Fel- (26) Air Brake, A. B. Murray, 280, Fel- (27) Air Brake, Air Brake, A. B. Murray, 280, Fel- (27) Air Brake, Air Brake, Air Brake,	The services mines and services of 150, 150, 150, 150, 150, 150, 150, 150,	"A'' 13 Produces 14, 21, 4, 21, 4, 21, 4, 21, 4, 21, 4, 21, 23, 23, 23, 23, 23, 24, 24, 24, 24, 24, 24, 24, 24, 24, 24	* flurnace, Anthracite	Boiler Plate
M. Cun-   Marie   M. Cun-   M. Cun	Levarior, A. B. Bowers. 337 Plow, A. J. Santen Levarior, A. B. Bowers. 337 Plow, J. T. Santen Co. 18	Xamopic Diseases   25 Feature   27 Feature	330 Sawdust for Fuel 348 "Sargent Ex-Senator, 117, 1 38 "Sargent Ex-Senator, 117, 1 39 "Sargent Ex-Senator, 117, 1 39 "Sargent Ex-Senator, 117, 1 310 Sawdust for Fuel	Miners Lamp 885 Miners Oppr seed 885 Winers Work 102 Minerals, California 989 Minerals, California	223, 245, 245, 248, 373, 383, 244, 245, 245, 245, 245, 245, 245, 245	Black Saud
Trick. 12 Wheel Fender, P. Portoi, 189 (Wheel Fender, Cought, ng. 189 (Wheel Fender, Cought, ng. 189 (Wheel Fender, Cought, ng. 189 (Whimferre, S. Halxiley, 316 (Whimferre, S. Halxiley, 200	The wave of the control of the contr	300   200	Saccharine 18 Salt, California 18 Salt in Oregon 18 Sapphire Mining	A consider to Talenton of the season of the	Fog, Experiments with; Pog, Experiments with; Proteing from; Proteing from; Proteing from; Proteing from; Proteing from;	Battery, Mew 70, 170, 170, 18 Belbing 25 Binetallism 25 Binetallism 25 Binetallism 35 Binetallis
Maker Hester, H. Stutes  Idea, E. Holott  O. Car. 194 Whitprops Dock, L. Sless	cerco-Medical Appara- 12. W. J. Flerco. 268 2 J. Muir. 2010-Properation Bells, X. McArthur, L. & W. J. Flerco. 268 2 J. &	Solution of the control of the contr	149 Rolls for Ore Grushing 38 Rauseall Process (See Lixiv- 351 tast in Iron	Mines, Californis, 2006, 2007,	20 Fires in Anthes Fires Dangerous Fires, Dangerous Fires, Dangerous String Seren String Seren String Seren Fires in Anthesis	Bald Mt. Extension Mine.2 *Band-Saw Mill3 Banner D'strict Bartel Machinery
7 Hung. Sequence 18 Section 19 Sequence 19	216 A. A. D. (amed of subport, of protests of property	128	AS River System of California. 209 Road Roller 34 Road Runner 34 Rose Oreek Mines. 149 Rock Oreek Mines.	*Mestoan Sineiting Works, *Mill, Economic. *Milling Ores, Cheap260, Milling Ores, Cheap260, [02]	18 Failures, Value of	gsphalbum
156 W T . Medical More M 158 W 7 M 7 M 168 W 169 W 1 M 169 W 1 M 169 W 1	edger, H. B. Dynoh 12 Forton Horlon mb. Water Etop, 19 Forton Mrest Plank and Water Flank Flower Stop, 19 Forton Mrest Plank Flower Stop, 19 Forton Mrest Plank Flower Flo	101 (1)	Resort for Tourists Resort for Tourists 423 Rheenmatism 411 Rafes 23 River Mining 338 River Bed Mining	Metallurgy, P. Ogress of Metallurgy, P. Ogress of Metallurgy, Rae System of. Mexican Mines	388. 26 Expendibutes on Placer Olympia Explosions, Boiler	Artona Gold Mine
alk, etc., 256 10, 100- 10, 100-	V. A. Kurowies. 129 adge, O. Geiger. 156 agge Vacuum, J. H. Preumiler, W. J. Freumiler, W. J. H. M. J. H. M. J. H. M. J. M.	177 * Willimandic F 2 of to T 7 103 Wire Efrash 38 Dre	135 Mailroad Freighls and 125 Mails Steel 23 Ratik Steel 29 Ratike Steel 29 Ratike Steel 29 Redwod Kes press 29 Ratike Steel	00 medical Ethics.  Medical Ethics.  Medical In Plants.  Medical In Plants.  Metallyrev, Ordein of Jils.	H. Gucalyptus, Valuable 4 * Eureka District204, S. Eureka Cons. Mine Ewer-McLeilan Ewer-McLeilan Ewer-McLeilan Ewer-McLeilan Ewer-McLeilan	A chid mony Mines
Takatsins, 522, Turn tehla, Mary L. Smith. 76, 77, 78, 77, 78, 77, 78, 77, 78, 77, 78, 77, 78, 77, 78, 77, 78, 77, 78, 77, 78, 77, 78, 78	ooy for Hunking, Wm. 140  T. C. White  T. C. White  T. C. W. A. A. Baint, Geo. W. Sw. Sw. Chowles  T. C. Shirine Bracket, Paper Unther, J. F. Bracket, J. F. C. Sw. Control of the Control of th	Second Se		Mechanics Engineers (258, Mechanics Ekilled (1978) Mechanics Ekilled (1978) Mechanics Exit (1978) Mechanics Exit (1978) Mechanics Exit (1978)	*Eugineer, Standard Ming. Dengineering Progress. Dengineering in Mexico. The Engineering in Mexico. Engineering in Mexico.	*Amalgamator, Willons', 3 Amarican drocalions
H. Mer. 76 Trademerk (S), Bristol Bay 76 Tradeol Bay 76 Tradeol Bay 86 Co. 776 Tradeol Bay 76 Tradeol Bay 76 Tradeol Bay 77 Tr	Spellman Ho. 140 Operating Table, and Reservoit, H. 160 Strange Garden, J. 160 Ga	22, water Tanka 22, 22, 22, 23, 24, 24, 24, 24, 24, 24, 24, 24, 24, 24	230 (Windine, Artificial	Macchinery and Labor Magnets and Liquids Malaria Maresee Ores 148, Marble, Italian	34 Emertor, rover S. Engrie, American 22 Engrie, Fraction 12 Engrie, Fraction	Aluminium AlloyAluminium AlloyAluminium, CasbingAluminium, Casbing30, Aluminium Process30, Amador Co. Min-s90, Amador Co. Min-s90, A
nyon, property of the control of the	Signature (1. 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,	2 02	227 Furcell Mines (See Bellg- H. 19 man District). Q. 19 Quartz Mill, Electric	181 182 Lumber, Paoine Cosst 183 Lumber, Paoine Cosst 184 Sesadamens340, 185 Maesadamens340,	28 Electricity, Heating by Blectricity, Brance of  Electricity, France of  Electricity, Heating by	Alseka Placers 258, 258, 258, 258, 317, 308, 324, 370.
Toberts, 156 pelics Bhatte, J. Alco- Hoy's 216, 2-s. Alco- Hyte, 264 Trunk gad Bureau, Kate W. Enbank 172, 172, 172, 172, 173, 173, 173, 173, 173, 173, 173, 173	Arberteson 6 Peppin article 18 Natives, 28 Nations, 19 Martines, 19 Nations or 6 Martines, 19 Nations,	10	390 Prospector Analyzed 259 Prospector, Old Time 183 Ptollasine in Milk 65 Pulley Surfaces 183 *Pung, Me ick's	575 Locomotive Traction 103 Locomotive Whistles 12 Longevity 12 Lub i-sting Oils 278 Lub i-sting Oils	12 Bleckri Shocks 82, 14 Bleckrioty and Quar 8. M. M. 181, 255, 197, 225	Adulf ra'ed Food
Dewink & Homes L. 349    Chain & C. 369	Active Sayof Viole States and Section States Sayof Viole Sayof Section Company of Section Sect	7.85. (13) 7.85. (14) 2.85. (15)	295 Pres dent's Meseage 123 Precess, New 1318 Process, New 198 Profit Shaving 199 Progressing	199, 38, 18, 180, 181, 180, 181, 180, 180, 180	Electric Mercorology	Acton Mines Academy of Sciences, 309, 3
PAGE  The state of	Modestic Work, T. 1864, 528, 1004, 1	130   140   150	Day Water Marker Marker Melon (July Marker Mark	*Liquid Fuel in Locomo thyes tixivistion of Ores, 56, 67 tixivistion of Ores, 146, 147,	7881 andmosoff	- 4
All Thessee, H. Wesher, J. Stephens, J. Chescher, J. Ches	ncentrator, F Batter, 14 Sandal and 12 and	20.0   20.0	on tracer visin expenditure. 215 Frants and Taste. 374 Plants, Food of. 374 Plush Fabrics. 419 Premoute.	Lead Te-b Lightering Device Lightering Device Lime Water and Milk	-ант gərd oititqəiog	• • • • • • • • • • • • • • • • • • • •
PAGE 108 Parnell for Princing 25 90 108 108 109 10	PAGE. 10 Miler Box, A. Cru Mill, Ore, A. E. E. G. Crusher, Donobo & Mill, Ore, A. E.	to 841səniM babininT 201, 100 101 Trinubing for Life Trinubing 194 (201, 194) (201,	261 Pipes, Water	Lead Ores, Working.	Ο ΛΟΓ΄ ΓΛ	

